

ANNUAL REPORT

1999-2000



**LOUISIANA DEPARTMENT OF
WILDLIFE AND FISHERIES**



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The Louisiana Department of Wildlife and Fisheries is charged with the responsibility of protecting, conserving and managing Louisiana’s abundant natural resources, wildlife and aquatic life.

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OFFICE OF SECRETARY

The Office of Secretary is administered by the Department's chief administrative officer, who oversees all scientific operations as organized by the Office of Wildlife and the Office of Fisheries. The Secretary also has ultimate authority over the operation of the Department's fiscal and business matters as administered by the Office of Management and Finance. Support operations of the Department report directly to the Secretary. These include two divisions — Enforcement, and Information and Education— and two promotional bodies — the Seafood Promotion and Marketing Board, and the Fur and Alligator Advisory Council (see Fur and Refuge Division) — as well as the Department's Legal Section.

ENFORCEMENT DIVISION

The Enforcement Division is responsible for enforcing laws enacted by the Louisiana Legislature relative to fish and wildlife resources and boating safety regulations, as well as federal regulations pertaining to migratory birds and endangered species.

Agents of the Enforcement Division issued 20,196 citations during this fiscal year. In addition, officers worked with other law enforcement agencies to provide public safety and assistance during local emergency situations.

In keeping with the Division's standard approach, special emphasis was placed on enforcement of deer and waterfowl regulations in 1999-2000. Both species have long been the most favored for hunting in the state. Hunter participation in waterfowl hunting has increased due to more liberal bag limits (six ducks and 20 geese) and longer season length (60 days) as waterfowl numbers increase.

The Wildlife and Fisheries Law Enforcement Academy maintained its high standards. Because of the level of professionalism and preparedness offered by the Louisiana program it is generally considered one of the best of its kind in the nation. Following training, many officers are organized into special force units. Each is dedicated to a particular enforcement mission.

Deer

Deer hunters numbered more than 180,000 and harvested an estimated 250,000 deer. Enforcement agents observed better compliance among hunters this fiscal year. Deer decoys were used with success in cases related to night hunting, shooting from public highways, and incidental poaching.

Waterfowl

The waterfowl enforcement training course instituted in 1993 continued as a standard entry in agent training. It provides specialized training in waterfowl identification and enforcement concerns in the southwest marshes and other waterfowl

habitat. This and other measures have enhanced effectiveness of enforcement of waterfowl regulations. National migratory bird managers instituted protective measures for waterfowl in 1986. It is apparent that public education concerning depleted waterfowl populations and improved hunter compliance have worked hand in hand. Hunter ethics are improving as a result. Numbers of waterfowl actually migrating to this state for 1999-2000 winter were at mid-range levels due to drought conditions. The U.S. Fish and Wildlife Service announced that according to the fall flight index numbers of birds along the migratory route were similar to last year's numbers.

Boating Law Enforcement

In fiscal year 1999-2000, the Enforcement Division combined traditional law enforcement with proactive boating education. Boating education classes were designed to teach safety and responsibility on the water. More than 3,400 Louisiana citizens completed 54 boater education classes taught by wildlife agents and trained volunteers. Legislation requiring mandatory boater education will be sought in the future and if enacted will induce greater participation in education courses.

Enforcement of boating regulations remained a priority and more than 8,087 boating violation citations were issued during fiscal year 1999-2000. Emphasis remained on the alcohol impaired boat operator. Boating under the influence (BUI) detection continued to improve. In addition to enforcing BUI laws, wildlife agents strictly enforced careless and reckless operation statutes, concentrating on the increasing number of personal watercraft.

Search and Rescue operations saved lives and min-

imized human suffering in unfortunate accidents. Agents are currently working to improve communications and reduce response time to arrival at areas of operation.

Training Program

Cadets receive a minimum of 25 weeks of training. The Wildlife and Fisheries Law Enforcement Academy graduated 44 new officers in the 1999-2000 fiscal year. A training facility constructed at Wildlife and Fisheries headquarters in Baton Rouge in June 1993 now provides classrooms and lodging facilities for both cadets and in service officers returning for additional training.

Most officers are certified in ten areas in courses conducted by experts from various agencies: standardized field sobriety testing (LDWF), chemical testing for intoxication (State Police), DWI detection (Highway Safety Division), tactical police driving (Baton Rouge City Police), Louisiana safe drivers' course (Department of Public Safety), basic marine theft (Mississippi Fish and Game), basic defensive tactics and collapsible baton techniques (LDWF), wildlife agents aquatic survival (LDWF), peace officers standard training (Louisiana State Police), and Chemical Weapon Indoctrination and Certification (LDWF).

The Division makes advanced training available to selected officers in such areas as drug identification in the field, marine theft, boating accident investigation, and diving/underwater law enforcement.

Special Force Units

The Oyster Strike Force (established in 1990) and Salt Water Enforcement Patrol (SWEP, established in 1983) continued to successfully enforce oyster and saltwater fishing regulations. These units work with the Division's pilot-agent and airplane to monitor commercial and recreational fishing activity along Louisiana's coastline. SWEP officers were also involved in several search and rescue operations.

The Covert Unit continued to develop substantial cases involving illegal sale and purchase of game, fish and protected species. Working in conjunction with the

Special Investigations Unit, they have focused on illegal sales of spotted seatrout and red drum and have initiated studies to create technology which will allow officers to reliably identify different fish species from filets and fish tissue samples taken from suspected violators.

Members of the Wildlife Enforcement Dive Team (begun in 1990) who had achieved Dive Master Certification sought more advanced training in 1999-2000. The team has 15 members.

The State Strike Force consists of two officers from each of the nine Enforcement regions and is designed to provide immediate, specialized additional manpower whenever and wherever needed. The Strike Force continued its concentration on commercial fishing violations, illegal interstate transport of commercial seafood products and theft of boats and marine equipment. Efforts resulted in better compliance with commercial regulations and the recovery of stolen boats and other property valued in thousands of dollars.

Louisiana Operation Game Thief, Inc., a program providing cash rewards to anyone reporting information which results in the arrests of wildlife violators, recorded more than 2,000 calls to its 24-hour, toll-free number. In fiscal year 1999-2000, OGT paid over \$7,000 in cash rewards to individuals who reported outdoor outlaws. This anti-poaching organization celebrated its 15-year anniversary in 1999 and has now paid in excess of \$140,000 in rewards since July 1984.



INFORMATION AND EDUCATION DIVISION

The Information and Education Division has many functions all in regards to public information dissemination and educational outreach programs. The Division works to inform the public of Department research and resource management programs related to the numerous recreational and commercial activities in the state. The Division also provides diverse education opportunities pertaining to conservation of wildlife and fisheries resources and outdoor recreation skills.

The Division is divided into two sections: the Information Section and the Education Section.

INFORMATION SECTION

The Information Section manages the communications activities for the Department of Wildlife and Fisheries. The section consist of four units: *Louisiana Conservationist*, Publications and News, Audio/Visual Productions and the LDWF Informational and Audio/Visual Library. These units are responsible for the production of the *Louisiana Conservationist* magazine, all regulation pamphlets, external newsletters, news releases, department video projects, department resource library, media relations and specialized public events.

Louisiana Conservationist

The *Louisiana Conservationist* magazine is the state's oldest outdoor magazine and the flagship publication for Wildlife and Fisheries. It has been in continuous publication for 78 years informing and educating Louisiana citizens on the recreational and commercial industries in wildlife and fisheries. The 36-page, full-color magazine is published six times a year, including the annual Wildlife and Fisheries calendar included as the January/February issue. The magazine's circulation fluctuated during fiscal year 1999-00 with the lowest count at 30,000 and the highest at 32,000. It is primarily subscriber-funded with some additional revenue from merchandise sales.

Publications and News

Publications

Publications other than the *Louisiana Conservationist* magazine include all regulation pamphlets, annual reports and specialized materials such as brochures, manuals and books.

Wildlife and Fisheries provides updated regulatory information each year to fishermen, hunters, trappers and general public for compliance to regulated outdoor activities. These user groups include both recreational and commercial use of the natural resources. The regulatory pamphlets

distributed this past year included hunting, recreational fishing, commercial fishing, waterfowl, trapping and turkey.

News Service

News covered all Department activities including wildlife and fisheries research and management, land management and purchases, enforcement, outdoor education, regulatory action, seasons and budget management.

A big change in the news section this past year was the introduction of electronic distribution. The mailing list was divided into two groups focused on media outlets and industry related businesses. The media mailing list consisted of approximately 250 outlets (television and radio stations, newspapers and periodicals) which received weekly news activities (news releases, news features, media advisories, etc.) through e-mail. The industry mailing list consisted of approximately 1,100 businesses (sporting good stores, marinas, specialty shops, etc.) who continued to receive the bi-weekly newsletter in print format. The newsletter is a compilation of current news releases and features



from a two week period prior to publication.

During fiscal year 1999-00 a total of 319 news articles (299 releases and 20 features) and 26 newsletters were distributed. LDWF held one press conference in cooperation with MADD (Mothers Against Drunk Drivers) to promote Safe Boating Week. This campaign was designed to heighten awareness of safe boating practices, including DWIs and proper use of Louisiana's waterways.

Media Relations

The media relations unit is a new development in the Information Section and evolved from the need for a more focused effort in developing ongoing relationships with Louisiana's major media markets. The need became especially apparent during a major media/information campaign launched in January 2000 to raise public awareness and support for proposed license fee increases. The campaign began in January and continued into the summer of 2000 involving extensive public exposure through newspapers, television, radio and public meetings. By June 2000, the total count of media and public contacts included 42 print interviews, 24 television interviews, 10 radio interviews, 12 conservation organizations meetings, 5 statewide public meetings and 1 editorial. The result was the passage of the proposed fee increase in the 2000 Louisiana Legislative Session.

Audio/Visual Productions

The Audio/Visual Unit set goals this year to restructure the focus and operations of the department's audio/visual capabilities. Equipment and materials were reviewed and repaired, and plans were developed for several video projects. These plans included reorganizing and cataloging existing footage for media requests.

The department's first full length video was produced and distributed in Spring 2000 highlighting the department's waterfowl management program. This video focused on the wood duck and its specialized characteristics and properly titled "Woodies". The 15 minute video was made available to all related user groups, schools, libraries and general public through the LDWF Informational and Audio/Visual Library.

Another new project taken on during the course of the year was the development of Video News Releases. Three VNRs were developed and dis-

tributed statewide to 15 television news stations. The VNR topics were "Restoration of the Endangered Louisiana Paddlefish", "Pass the Paddle: Louisiana Scenic Rivers Program" and "Boating Safety Week". Other media requests for footage included redfish, hunting and hunter orange, ducks and waterfowl, enforcement activities and various other topics used during the Fee Increase Campaign.

Informational and Audio-Visual Library

The department's library is open for public access. Available materials include approximately 50,000 different publications covering topics from Wildlife Management Areas to specialized management programs, consumer manuals and *Louisiana Conservationist* archives to current regulations and historic copies of past regulations. In addition to printed materials, 80 different VHS videos were available this year for loan, free of charge.

Information requests were received daily through various sources. The total number of information requests by source for fiscal year 1999-00 was 1105 telephone, 964 mail, 198 e-mail and 2806 walk-ins. These numbers represent video requests as well as printed materials.

Miscellaneous Information Activities

The Information Section is in charge of organizing and executing Louisiana National Hunting and Fishing Day for Baton Rouge. This annual event is sponsored by Wildlife and Fisheries and offers a full day of outdoor activities for the public, free of charge. This was the 15th year for Baton Rouge, always slated for the fourth Saturday in September, and attracted more than 2400 attendees. NHFD offers LDWF prime opportunity for one-on-one contact with the public. Exhibitors included other state agencies, user groups and conservation organizations along with local businesses, universities and community groups as volunteers.

EDUCATION SECTION

The Education Section has as its focus four education programs: Hunter Education, Aquatic Education, Wildlife Education and Special Programs. These cover species and habitat management, ethics in the woods, safety, regulatory measures, and sporting skills. In addition, they provide learning opportunities for many novice outdoor recreationists and advanced training for the committed outdoor enthusiast. Special Programs include offerings for specific targeted audiences, such as workshops, short courses and classes for students, teachers, women and families. Department educators prepared and presented a variety of education programs across the state. A great deal of effort was dedicated to recruiting and training a corps of volunteers who in turn offer instruction throughout the year at many locations. Volunteer instructors include teachers, youth group leaders, sport group organizers and other interested adults.

Hunter Education Program

State law requires anyone born on or after September 1, 1969 to successfully complete a hunter education course before purchasing a hunting license. The primary focus of the Hunter Education Program is certification of young hunters as safe and responsible sportsmen. During the year, hunter education staff sponsors and assists over 1,000 volunteer instructors in conducting classes for many civic and sportsman groups, schools and sheriffs' offices. A total of 467 student courses were conducted resulting in the certification of 20,588 students.

Time and expertise of volunteer instructors dedicated to teach the basic certification course serves as in-kind state match for federal grant funds. This satisfies the federal eligibility requirement for Louisiana Department of Wildlife and Fisheries to receive funding for the Hunter Education Program.

Hunter education staff conducted instructor certification courses certifying 129 new instructors. Also held was an advanced volunteer instructor workshop for 133 participants at Camp Grant Walker in Pollock. The purpose of the workshop was to update volunteer instructors on new methods of teaching and techniques. The sessions included ethical trapping, survival, snake identifi-

cation, conservation and knife making. New advanced short courses are offered each year.

Hunter Education staff members are responsible for the construction and operation of public shooting ranges. The staff manages public shooting facilities at Bodcau, Sherburne, and Pearl River Wildlife Management Areas, Natchitoches shooting range and Woodworth Outdoor Education Center.

Youth Hunter Education Challenge (YHEC)

Again, Louisiana's youth did exceptionally well in this national hunting skills competition. The Youth Challenge begins at the local level when qualified students tested their skills in riflery, archery, shotgun and muzzleloader shooting, orienteering, wildlife species identification, and written mastery of the material in local competitions. Then two junior and two senior teams were selected to compete in the national competition sponsored by the National Rifle Association. Louisiana's Junior team was the national champion and the Senior team finished third.

Bowhunter Education

The demand for bowhunter classes continues to grow. Staff and volunteer instructors conduct courses to provide this free service to the public. During this reporting period three bowhunter instructor courses were conducted certifying 25 new instructors. There were 77 student courses conducted for the public certifying 2,256 individuals. Although the state mandates no certification requirements for bowhunting, several National Refuges have mandated bowhunter education as a prerequisite to hunting on their facility.

Hunting Accidents

There were 13 hunting accidents reported during the 1999-2000 hunting season. The accidents consisted of four fatalities and nine non-fatal accidents. Since mandatory hunter education began in 1985, the accident rate has declined significantly.

Aquatic Education Program

The Aquatic Education Program was designed to acquaint youth and adults with the sport of fishing, management of fish species, and the science of Louisiana's diverse aquatic habitats. The education staff made the Aquatic Education program materials available to public and private schools through workshops, conferences and personal contact.

Nearly 25,000 activity books entitled "Let's Go Fishing" were distributed to elementary schools. This activity book was developed by the Department and is provided free of charge to Louisiana teachers. The activities create an interest in the sport of fishing and acquaint students with food chains, regulations, management and recreational fishing. The middle school program centers on resource management, wetlands, and fishing activities.

A volunteer force and employees of the Department presented publicfishing clinics. The clinics consisted of three to six hours of instruction covering the use of equipment, fish identification, knots, ethics and water safety. An optional portion of a fishing clinic provided actual fishing opportunities for the participants. The Department furnished rod and reels/cane poles, hooks, and sinkers for the clinics. Some 400 Louisiana citizens participated in the program.

Disabled fishing clinics were conducted statewide for children enrolled in disabled programs within the different parish school systems. This served as an opportunity to introduce fishing to those less fortunate and provided an activity to allow these individuals to get outdoors. Instructors gave a little classroom instruction with a greater emphasis placed on actual fishing.

The Department worked with Department of Education to develop workshops for educators that meet workshop requirements for teacher in-service training. The Department of Wildlife and Fisheries, Louisiana State University, Cooperative Extension Service and LSU Sea Grant College program conducted a summer wetland ecology camp for senior 4-H members entitled "Marsh Maneuvers". The participants were selected by LSU from senior 4-H members across the state. Education activities at the St. Amant Marine Research Lab on Grand Terre Island focused on developing an understanding of the importance of wetlands, relationships between habitat types and wildlife, the need for wetlands, the differences between fresh and saline marshes, the sport fishing opportunities found in coastal Louisiana. Other student activities introduced the students to decision making exercises in conserving coastal wetlands of Louisiana. The camps were conducted at Department-owned or other governmental agency facilities located along the coast of the state (e.g.

Grand Isle Marine Lab, State Wildlife Refuge, LUMCUM facility at Fouchon).

Wetshop is a week-long teacher workshop that introduces classroom teachers to environmental topics related to Louisiana's coastal areas. Training and materials are provided for the teachers to take back and use in their classrooms. Teachers are trained in activities and resource management issues relevant to Louisiana at the St. Amant Marine Research Lab on Grand Terre Barrier Island. Teachers work alongside resident marine biologists to learn the link between gathering scientific data and resource management.

A visitor center is located at the Booker Fowler Fish Hatchery. The Aquatic Education Program is responsible for the operation of the visitor center. It consists of an auditorium with several aquariums that depict various fisheries habitats and freshwater species that occur within the state. The auditorium has a seating capacity of 60 people. A full-time educator is stationed at the hatchery and conducts tours for school, civic, and other groups. An education program was developed that introduces teachers to the hatchery and how the agency manages fishing resources.

Wildlife Education Programs

Fifteen Wildlife Educators prepared and presented a variety of wildlife programs to grades K-12 in public and private schools, and youth and civic organizations. The programs developed by the educators were designed to educate the public about Louisiana's diverse wildlife resources and the Department's resource management activities. Educators also presented hunter safety programs at civic clubs, sportsman organizations and safety meetings. They attended several teacher conventions where they received training and materials as well as set up and manned displays promoting the Department's many education programs and activities. The demand for services, classroom presentations and teacher enrichment workshops continues to exceed the manpower capabilities of this section.

Project WILD (Wildlife in Learning Design) is a national, award-winning conservation and environmental education program composed of instructional workshops and supplementary curriculum materials for kindergarten through high school teachers. These workshops are exciting,

involving, productive, and professional experiences which fully prepare participants to teach the new material. Project WILD activity guides are provided to teachers who participate in Basic and Aquatic Project WILD workshops.

During 1999-2000, 22 Basic WILD instructor workshops were held with 376 participants and 16 instructor workshops were held with 306 participants. Since May 1989, more than 9,000 educators have received Project WILD materials. Project WILD material is used by trained educators to provide wildlife and conservation education to an estimated 189,000 Louisiana students.

Special Programs

A number of new and ongoing programs played a major role in accomplishing the Education section's goal of providing new user groups with outdoor education opportunities.

HOOT (Hands On Outdoor Training) Camp

HOOT Camp is a weeklong resident environmental science and outdoor skills summer camp for boys and girls entering 6th, 7th or 8th grade. The environmental science concepts covered are linked to the Louisiana Science Curriculum Benchmarks established by the State Department of Education. Science teachers provide the environmental science instruction while the education staff provides the outdoor skill instruction. Four camps are offered during the year with 25 students per camp.

FUN (Families Understanding Nature) Camp

FUN Camp is a weekend adventure of outdoor fun for a single parent with their children. The participants receive instruction and hands-on practice at various outdoor activities such as, rifle and shotgun shooting, archery, fishing, canoeing and camping. The four camps conducted at the Department's Outdoor Education Center located at Woodworth provided the opportunity for 60 families to participate. The camps received national media coverage, which started several similar programs in other states.

Becoming an Outdoors-Woman (BOW)

BOW was again a success, having overflow sessions at both workshops. This program introduces women to the outdoors by providing the training needed to participate in a variety of outdoor activities. Over 250 women attended short courses on a variety of topics designed to teach

new ways to enjoy the outdoors and how the LDWF manages our natural resources.

The Education staff developed and conducted two advanced workshops for women that have participated in a BOW weekend. Women spent one weekend on the range where they perfected their markswomanship skills in rifle, shotgun and archery. During the second weekend ladies received instruction in saltwater fishing.

Partnership Programs

The Education Section, with support from Ducks Unlimited, Wild Turkey Federation and Safari Club International conducted several teacher workshops this year. These programs were conducted at LDWF's Outdoor Education Centers. Teachers received hands-on training in resource management issues that pertain to Louisiana.

Scout Programs

Educators were involved in developing programs and working with Boy and Girl Scout troops to assist them with outdoor education and earning of merit badges. Scouts receive training in wildlife and fisheries careers and are schooled in ways that help them earn merit badges in conservation, ethics, outdoor skills, hunter safety and resource management.

National Hunting and Fishing Day

The Education Section also plays a major role each year in the planning and coordinating of National Hunting and Fishing Day activities at Monroe, Minden, Slidell and Tensas Refuge. Numerous activities and informational displays are manned by staff and volunteers to stimulate interest in a variety of outdoor activities and inform the public of the services and accomplishments of the Department.



Louisiana Seafood Promotion and Marketing Board

The responsibility of the Louisiana Seafood Promotion and Marketing Board is to strengthen and expand Louisiana's commercial fishery-related industries and cultivate new markets for the state's seafood products.

Other general areas of responsibility include: efforts to increase overall contribution of the commercial seafood industry to the economy of the state; development of a broader consumer base throughout the United States and abroad; maintaining and increasing levels of production and dockside prices for

Louisiana seafood products; creation of jobs in the fishing and processing sectors; increasing the economic impact of the industry through further value-added processing; and promoting higher standards of product quality for the entire producing, processing, and marketing segments of the seafood industry.

The Board also serves the general public by providing greater product awareness, information about preparation, and education on the benefits derived from seafood consumption. The Board also conducts

Fur and Alligator Advisory Council

The responsibilities and accomplishments of the Fur and Alligator Advisory Council are included in the section discussing furbearer programs of the Fur and Refuge Division.

OFFICE OF MANAGEMENT & FINANCE

The Office of Management and Finance is administered by the Undersecretary. This budget unit is responsible for the functions of accounting and budget, contract management, grant reporting, program analysis and management, human resources and payroll, information processing systems, procurement, strategic and operational planning, fleet and property management, socioeconomic research and development, customer service, and administrative services.

FISCAL

This section is staffed by thirteen employees who perform all departmental duties related to general accounting, budget, financial reporting, contracts, revenue collection and reporting, civil fines assessment and collection, telecommunications, record management, strategic and operational planning and fund management.

The Department operates under a five-year strategic plan with intermediate revisions every three years. The Fiscal Section is responsible for facilitation, coordination, and compilation of the plan's components.

The main goal of this unit is to achieve compliance with all applicable laws, rules, and regulations governing its activities. In so doing, the staff develops and implements internal fiscal controls, provides advice, assistance, and training for department employees, and standardizes procedures.

* See Appendix for Revenue and Expenditure charts

During fiscal year 1999-2000:

One hundred thirty-five new professional service contracts, grant agreements, and cooperative endeavors were approved. Payments issued against these totaled \$3.3 million.

The Accounts Payable Unit issued 8,973 checks from the in-house imprest account for travel reimbursements and other expenses and processed approximately 22,500 payments to vendors through the statewide accounting system—totaling almost \$22 million. Sixty percent of staff enhanced their computer skills specifically in Infomaker and Microsoft software increasing the efficiency of operations; procedures for the processing of professional service contracts were written; a policy governing the write-off of accounts receivable was developed; reconciliation of the bank account and in-house system was automated; and desk manuals on 45 percent of positions were completed.

HUMAN RESOURCES

The Personnel Section administers all aspects of an extensive human resource program for the Department of Wildlife and Fisheries. The Human Resource (HR) staff provides assistance to active employees, retirees, former employees, and their dependents. Some of the program areas are Human Resource Administration, Classification, Compensation, Recruitment, EEO Compliance, Affirmative Action, Selection and Placement, Benefits, Employee Administration, Payroll Administration, Performance Appraisal, Training and Staff Development, Employee Relations, Discipline and Safety. Below is information that will show the activity of our agency in several key Human Resource Areas.

Department Profile: Total number of paid employees (including regular and students) on June 30, 2000 was 826 or about one percent of state employees. The ratio of all employees to professional HR employees was 103:1. The number of allocated classified positions was 1,136 or a little over one percent of the number of allocated classified positions (total positions managed, both filled and unfilled, both regular and student) statewide. **Turnover information:** The Department experienced an 18.19 percent classified turnover rate from the department and a 15.63 percent turnover rate from state service. This is compared to 1997-1998 classified turnover rates of 25.37 percent from the department and 20.00 percent from state service. 1998-1999 classified turnover rates were 14.53 percent and 12.15 percent respectfully.

Leave Information: Total average hours out per pay period per employee (sick, annual, K-time, leave without pay) was 7.54 compared to 10.08 statewide. Total average hours out per pay period per employee (sick and annual) was 6.66 compared to 7.29 statewide.

Disciplinary Information: Number of disciplinary actions taken against classified employees was 18 or about .5 percent of disciplinary actions taken statewide.

Appeals Information: The Department had 15 appeals filed, which reflects about three percent of the appeals statewide. LDWF settled 73 percent, won 27 percent and lost zero percent of the appeal filed.

State Personnel Records Information: Number of

classified actions processed for the Department was 2307 or about 1.2 percent of the classified actions processed statewide. The number of unclassified actions processed was 377 or about 0.6 percent of unclassified actions processed statewide.

Examining/Selection and Placement Information: LDWF requested 138 certificates of the 6,687 (or about two percent) certificates requested statewide. Of the requested certificates LDWF canceled about 40 percent whereas 51 percent was canceled statewide. LDWF filled 130 position by classified authority and 102 interviews were held. Human Resources attended about 98 percent of the interviews. 33 percent was filled by competitive probational appointment, 34 percent filled by competitive promotion 18 percent filled by Certifiable score, 15 percent filled by various non-competitive authorities (appointment/promotion/re-employment) and one position filled by 3.5GPA authority.

Classification and Pay Information: Fifty-four position descriptions were submitted (0.7 percent) statewide. The HR staff made 80 percent of the total decisions for the department, which is 35 percent above the statewide average.

Drug Testing Information: 18 percent of the total workforce was selected, 13 percent of the total workforce was tested and 73 percent of the employees actually selected were tested through our random drug-testing program. 100 percent of all new hires and employees promoting to higher position were tested and there was no testing for reasonable suspicion.

Performance Planning and Review Information: There was a total of 739 classified employee who had anniversary dates during the time period of July 1, 1999 through June 30, 2000. Of the 739 classified employees, 0 percent rated Poor, 1percent Needs Improvement, 38 percent Satisfactory, 53 percent Very Good, 4 percent outstanding and 4percent Satisfactory by default.

Training Information: A total of 13 percent (106) attended management training and 26 percent (217) attended safe driving training.

Safety Program Information: The Department had six percent (51) worker's compensation injuries.

The Department successfully passed the Office of Risk Management Audit which gives the Agency a five percent saving and a five percent credit of a two million dollar premium.

Customer Service: The Department received 33,323 phone call to the main phone line and assisted 11,706 walk-ins at the Front Desk from July 1999 to June 2000.

ADMINISTRATIVE SERVICES

The Administrative Services Section consists of Purchasing and General Services.

The administrative staff worked closely with and supported other divisions in their endeavors. More specifically they assisted with agency term contracts specific to Wildlife and Fisheries, seafood promotions, alligator harvest, timber sales, farm leases, and managed deer and turkey hunts.

Purchasing

Purchasing insures compliance with all state and department laws and regulations concerning procurement. Purchasing trains and serves as the help desk for all divisions in the state wide computerized system called ISIS. The purchasing part of ISIS is called AGPS.

The following are tallies of the purchase orders issued and/or reviewed for compliance by the Purchasing staff for 1999 - 2000 fiscal year: requisitions through Louisiana State Purchasing - 90; department purchase orders 812; department release orders approximately - 1,372; department small purchases approximately -13,936. In addition, 29 leases were maintained, initiated or updated.

The mail system, printing, receiving, messenger, reproduction and supply room are sub-units of General Services. Over 200,000 pieces of mail were processed. Over one and half million copies were produced on the duplicating machine. The supply room utilized an automated computer application to maintain a current inventory and distribute necessary office supplies to headquarters, district offices and remote facilities.

SOCIOECONOMIC RESEARCH AND DEVELOPMENT SECTION

The Socioeconomic Research and Development

Section was established in 1992 within the Office of Management and Finance of the Louisiana Department of Wildlife and Fisheries (LDWF). The duties and responsibilities of the Socioeconomic Research and Development Section are listed below.

Conduct, coordinate and recommend multiple economic research studies pertaining to wildlife and fisheries habitats and resources of Louisiana and the Gulf Region; present research findings at appropriate professional and scientific meetings and publish results in departmental publications and peer-reviewed scientific journals; provide assistance and support to other divisions and sections within the department as well as agencies outside the department so as to accomplish their research analysis, tasks, and short and long-term objectives; represent the State and Department in various study groups, on task forces, and on committees established to effectively study, manage, and improve wildlife and fisheries resources at the local, state, regional and national levels; administer and implement special statewide programs; perform other activities as directed by the appointed authorities

Publication, Reports and Presentations

A list of publications, reports, and presentations completed during Fiscal Year 2000 include:

Publication and Reports

Five Year Fiscal Projections and Revenue Proposals of the Louisiana Department of Wildlife and Fisheries, August 1999.

Customer Service Plan & Customer Service Employee Action Plan 2000, October 1999.

1999 Customer Service Assessment Report, October 1999.

The Louisiana Shrimp Industry - A Preliminary Analysis of the Industry's Sectors prepared for the Natural Resource Committee, Louisiana State Senate, May 2000.

Presentations

Results of a Survey of Louisiana Oystermen Regarding Predation of Black Drum, American Fisheries Society, 129th Annual Meeting, Charlotte NC, September 1999.

An Economic Analysis of the Gulf of Mexico's Oyster Processing Industry, 92nd Annual meeting of the National Shellfisheries Association, Seattle WA, and March 2000.

A Two Stage Approach to Evaluating Wildlife Watching Participation and Trip Related Expenditures in the South, Southwest Society of Economist Meeting, San Antonio, TX, March 2000. Some Preliminary Results from Commercial Fishermen Regarding Hypoxia in the Gulf of Mexico, Gulf of Mexico Symposium 2000, Mobile, AL, April 2000.

Special Programs

Special programs administered by the section during Fiscal Year 2000 include the Clean Vessel Program, Customer Service Program and the Fishermen's Logbook Program. A description of each program and list of accomplishments for Fiscal Year 2000 is presented below.

Clean Vessel Program

The Clean Vessel Program provides funds to owners of recreational boat facilities for construction and renovation of boat sewage disposal facilities. The purpose of this program is to reduce the amount of overboard dumping of raw boat sewage in Louisiana's waters by providing boaters with an alternative method to dispose of their boat sewage. Under the program, recreational boat facility owners are reimbursed up to 75 percent of costs for approved activities. Funds are also used to develop and distribute educational and informational materials to encourage boaters to use these facilities and promote environmentally responsible behavior.

Accomplishments include the completion of one and the startup of four new boat sewage facility construction projects.

Locations of the Four New Boat Sewage Disposal Construction Projects:

Mariner's Village Marina located on Lake

Pontchartrain in St. Tammany Parish

Buras Boat Harbor located on Bay Pomme d'Or in Plaquemines Parish

Empire Boat Harbor located on Adam's Bay in Plaquemines Parish

East Pointe A la Hache Boat Harbor located on Pte. A la Hache Marine Canal in Plaquemines Parish

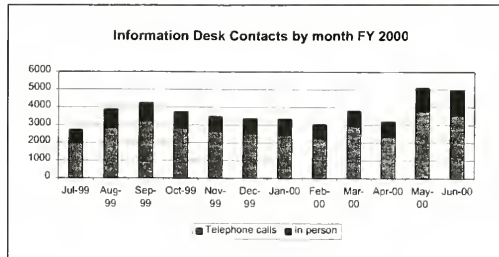
Location of the Boat Sewage Construction Project

Completed during Fiscal Year 2000:

Bowtie Marina located on Contraband Bayou in Calcasieu Parish

Customer Service Program

The Louisiana Department of Wildlife and Fisheries' statewide Customer Service Program was established in 1999 to ensure the delivery of



effective, efficient, and responsive customer service to Louisiana residents, users of resources managed by the Department, and the Department's employees. The specific goal of the Customer Service Program for Fiscal Year 2000 was the development of means for customers and employees to register and acquire responses to their comments, suggestions, and complaints in a timely manner.

Customer Service Program accomplishments for Fiscal Year 2000 include:

- Establishment of a statewide Customer Service Committee
- Creation of a comment/suggestion card for use by the public
- Creation and placement of comment/suggestion boxes at 20 statewide LDWF locations
- Creation of an Internet customer service web page (<http://www.wlf.state.la.us/apps/netgear/index.asp?cn=lawlf&pid=459>)
- Development of Minimum Customer Service Standards
- Development of an Internet comment and Department rating area (<http://www.wlf.state.la.us/commentcard.html>)
- Creation of a customer service area on the Department's Intranet site (<http://wlfnt1/customer.html>)
- Development of an anonymous employee comment form on the Intranet site
- Development and implementation of a customer service comment database and tracking system via the customer service channels

- Development and execution of a customer service-related survey at the 1999 National Hunting and Fishing Day events held at Baton Rouge, Minden, and Woodworth locations
- Development and execution of an employee customer service survey
- Development of the first annual Customer Service Assessment Report
- Development of the second annual Customer Service Plan
- Development of the second annual Employee Action Plan

Fishermen's Logbook Program

The Fishermen's Logbook Program tracks commercial fishing patterns in relation to hypoxic "dead zone" areas located in State and Gulf waters. Business investment and trip related costs associated with shrimp and charter boat operations are also collected.

Fishermen's Logbook Program accomplishments for Fiscal Year 2000 include:

recruitment of a total of 66 participants into the logbook program; establishment of a computer logbook database; collection and tabulation of logbook information for 1,123 charter and 363 shrimping trips; development and execution of a commercial shrimp and charter boat cost of operation survey

PROPERTY CONTROL

The Property Control Section consists of property control, fleet management and risk management

insurance claims sections and Headquarters Motor Pool.

The Property Control Section insures that all equipment purchased is properly tagged and accounted for in accordance with all state rules and regulations.

Administered field training on property control, tagging, fleet management and risk management

A physical inventory is conducted annually at the various offices and field installations throughout the State. The inventory consists of some 19,000 items with a total acquisition cost of over \$37,025,300.

Removed and untagged all items under \$1000.00 with the exception of weapons

Vehicle Maintenance

The Property Control staff is responsible for managing the 550 Department owned vehicles. The section insures compliance with all state fleet rules and regulations. The section receives and distributes over 100 new vehicles each fiscal year.

Risk Management Insurance Claims

The Property Control staff provided assistance and information to Department employees who filed some 650,000 dollars worth of collision, liability, property and comprehensive claims during the past fiscal year. These claims were handled and processed through the Office of Risk Management.

OFFICE OF WILDLIFE

The Office of Wildlife consists of two divisions, the Wildlife Division and the Fur and Refuge Division.

WILDLIFE DIVISION

The Wildlife Division is responsible for the state's wildlife conservation program and gathering biological data to properly manage wildlife resources.

Statewide Division responsibilities are administered through seven regions. Region biologists and wildlife specialists regularly serve the public by:

- developing and managing wildlife habitat and infrastructure on over one million acres of land in the Wildlife Management Area system.
- providing technical assistance to private landowners interested in enhancing and managing their property for wildlife.
- monitoring wildlife populations and gathering

information for the development of hunting season recommendations and improvement of wildlife habitat.

- providing and managing public hunts for deer, (regular gun, muzzle loader, and archery) dove, quail, rabbit, raccoon, squirrel, turkey, woodcock, and waterfowl on Wildlife Management Areas.
- contributing to management of alligators and furbearers on WMAs and public lakes.
- assisting the public with nuisance animal prob-

lems caused by animals such as coyotes, beavers, alligators, squirrels and deer.

- presenting programs to conservation and civic organizations and providing information and assistance to television and newspaper journalists.

The state is divided into seven administrative regions as follows:

Region 1 (northwest Louisiana: Bienville, Bossier, Caddo, Claiborne, DeSoto, Red River, and Webster parishes). Habitat consists predominantly of rolling, mixed pine-hardwood forest habitat bisected by the Red River and agricultural lands bordering it. Approximately 80,000 acres are included in the Bodcau, Jackson-Bienville, Soda Lake, Loggy Bayou and Bayou Pierre Wildlife Management Areas. All WMAs in Region I are managed to provide all segments of the hunting public the opportunity to utilize the WMAs in a quality environment.

Region 2 (northeast Louisiana: East Carroll, Jackson, Lincoln, Morehouse, Ouachita, Richland, Union, and West Carroll parishes). Habitat types consist of rolling mixed-pine hardwood forest and Mississippi River bottomland forests. The Bayou Macon, Big Colewa, Georgia-Pacific, Ouachita, Russell Sage, and Union WMAs are located in the region, totaling over 70,000 acres. In addition, the Floy McElroy Wildlife Management Area, a 700-acre tract donated to the state, is managed on a low maintenance basis until fully released to the Department by the donor.

Region 3 (west-central Louisiana: Grant, LaSalle, Natchitoches, Rapides, Sabine, and Winn parishes). Habitat consists primarily of piney woods. Department-owned lands include Dewey W. Wills and Little River Wildlife Management Areas, totaling almost 65,000 acres. Three leased WMAs (Alexander State Forest, Camp Beauregard, and Sabine, plus a portion of Little River) provide an additional 36,000 acres for outdoor recreation. Leased WMAs are provided without fee to the Department. Catahoula Lake is a state-owned water bottom consisting of approximately 36,000 acres. The lake has been designated as a wetland of international importance as it provides premier inland wintering waterfowl habitat. In addition to the WMA's, the U. S. Forest Service owns over 500,000 acres within Region 3.

Region 4 (east-central Louisiana: Caldwell, Catahoula, Concordia, Franklin, Madison, and Tensas parishes). A broad range of habitats from mixed pine-hardwood uplands to bottomland hardwood forests associated with the alluvial flood plains of the Boeuf, Black, Red, Ouachita, Tensas and Mississippi river systems are provided. Six WMAs (Red River, Three Rivers, Boeuf, Sicily Island Hills, Big Lake, and Buckhorn) are located in Region 4 and total approximately 150,000 acres.

Region 5 (southwest Louisiana: Acadia, Allen, Beauregard, Calcasieu, Cameron, Evangeline, Jefferson Davis, Vermilion, and Vernon parishes). Habitat ranges from extensive coastal marshes, to prairies and vast agricultural areas, to hardwood bottoms, to rolling hills of pine plantations and mixed pine-hardwoods. Seven WMAs (Boise-Vernon, Fort Polk, Marsh Bayou, Peason Ridge, Sabine Island, Walnut Hill and West Bay) totaling approximately 270,000 acres are managed within the region.

Region 6 (south central Louisiana: Avoyelles, Assumption, most of Iberville, Iberia, Lafayette, Pointe Coupee, St. Landry, St. Martin, St. Mary, Terrebonne, West Baton Rouge, and portions of West Feliciana and Ascension parish). Habitat type ranges from mixed pine-hardwoods, to backwater bottomland hardwoods interspersed with agricultural lands, and cypress-tupelo swamps, to open-water areas. There are seven WMAs, comprising almost 115,000 acres (Sherburne, Thistlethwaite, Grassy Lake, Spring Bayou, Attakapas, Elm Hall, and Pomme de Terre), one federal refuge, and U.S. Army Corps of Engineers land within the region.

Region 7 (southeast Louisiana: most of Ascension, East Baton Rouge, East Feliciana, Livingston, Iberville, Orleans, Jefferson, St. Helena, Tangipahoa, Washington, St. Tammany, St. Bernard, St. James, St. John, Plaquemines, St. Charles, Lafourche and portions of West Feliciana parishes). Habitat types range from marshes and swamps to rugged loess bluff uplands. Nine wildlife management areas (Pearl River, Joyce, Manchac, Sandy Hollow, Bens Creek, Hutchinson Creek, Tunica Hills, Lake Boeuf and Lake Ramsey) consisting of approximately 80,000 acres are located in this region.

The Wildlife Division divides its responsibilities

into two major categories: (1) Habitat Stewardship and (2) Research and Management.

HABITAT STEWARDSHIP

Habitat Stewardship is organized in three basic categories: Land Acquisition, Land Development, and Forest Management.

Land Acquisition

Land acquisition for wildlife management purposes is the best way to ensure that there is sufficient quality habitat for the state's diverse wildlife resources. During fiscal year 1999-00, four acquisitions, one donation and one trade were completed:

- 136 acres were purchased and added to Pearl River WMA in St. Tammany Parish
- 2,805 acres were purchased and added to Boeuf WMA in Caldwell Parish
- 875 acres were purchased and added to Bayou Pierre WMA in DeSoto Parish
- a 1996.5-acre donation was accepted from the Department of Corrections and added to Tunica Hills WMA in West Feliciana Parish
- a 350-acre trade with State Parks was added to Tunica Hills WMA in West Feliciana Parish

Land Development

Land development involves both wildlife habitat enhancement and infrastructure improvement to accommodate public use of the 46 WMAs. Typical activities include road and bridge repair and construction, vegetation control, tree planting, water control structure operation, pump station operation, wildlife food plot development, and boundary maintenance. Coordination and monitoring of mineral exploration activities is also a function of the Wildlife Division on WMAs.

Forest Management

The mission of the Forest Management Program is to improve forest/wildlife habitat on WMAs through sound forest management, reforestation practices and active forest/wildlife research activities. This program also serves to demonstrate the integration of forest management and wildlife habitat management to private landowners.

Public Lands: General forest inventories were completed on only 13 of 16 scheduled compartments due to budgetary constraints. Additionally, 6 tracts of private land were inventoried/GPS'ed for possible acquisition. Subsequent prescription developments were initiated on 24 compartments of 15 WMAs to plan habitat work on those WMAs.

Harvest preparations (sale layout, inventory, regeneration counts, marking, map work, and proposal preparations) were completed on Alexander State Forest, Big Lake, Black Bayou, Boeuf, Buckhorn, Dewey Wills, Red River, Sherburne, Sicily Island, Spring Bayou and Three Rivers WMAs. The state's depressed timber market, especially for hardwood pulpwood, resulted in limited to no bidding activity on most of these sales when offered. Timber harvests to improve wildlife habitat were conducted on Boeuf, Big Lake, Buckhorn, Ouachita, Russell Sage, Sherburne, Union and Three Rivers WMAs with no southern pine beetle infestations/outbreaks were reported this year.

Reforestation work was continued on other department properties with concentration on Attakapas Island, Boeuf, Colewa Bayou, Hutchinson Creek, Loggy Bayou, Ouachita, Red River, Sherburne, Three Rivers and Union WMAs. Activities included site development and preparation, seedling planting,



survival plot establishment and survival checks. Approximately 1,076 acres were reforested during the 1999-00 season, less than planned due to drought conditions.

Acorn and various tree seed collections were conducted to ensure a seed and seedling source for future reforestation efforts. The annual WMA mast survey aids this effort by concentrating collection efforts where the most needed types of trees species are available. The mast survey also provides an indication of the future abundance and expected breeding condition of forest wildlife species.

TSI work continued on Sherburne with an attempt to control Chinese tallow tree invasion by injection of the mature seed producers along the Atchafalaya River levee.

GPS work on WMA trails, roads, lakes, compartment and area boundaries were accomplished to aid in the overall WMA management program.

Growth monitoring plots (GMPs) were established/re-established on Attakapas Island, Big Lake, Red River and Union WMAs. These permanent plots aid in monitoring habitat conditions and effects of our forest management program on the habitat components represented on the WMAs.

Private Lands: LDWF Forestry Section staff provided technical assistance through the Louisiana Forest Stewardship Program, a program offered by the Louisiana Department of Agriculture and Forestry for private non-industrial landowners. The program supports a multiple use approach to forest management. LDWF provides the wildlife management expertise. Numerous landowners were assisted in fiscal year 1999-00, with plan developments and follow-ups to assist the landowners in managing their properties for wildlife benefits.

RESEARCH AND MANAGEMENT

A wide range of research and management work is conducted in order to maintain healthy productive populations of game and to provide recreational opportunities for citizens to enjoy these species. Staff biologists gather data on game birds and animals, largely for use in formulating hunting regulations and development of habitat management

recommendations. They develop workshops for the Department and other agencies' personnel training and present seminars to the public. In addition, they represent the Department on state, regional, and national committees, providing wildlife input to a wide array of public agencies, NGO's and private industry. The game species programs are Upland Game, White-tailed Deer, Waterfowl, and Wild Turkey.

UPLAND GAME

Dove

Populations have been monitored nationwide since 1953 by a call-count survey. This survey is used by the U.S. Fish and Wildlife Service to monitor mourning dove population trends. Biologists record the number of doves heard calling for a prescribed time during the nesting season along certain roadsides. Louisiana's dove population is monitored along 19 routes randomly located throughout the state. In May 2000, the breeding population index based on doves heard along the routes was 17.2. This represents a 9.4 percent decrease in doves from 1999.

Dove hunting regulations for Louisiana in 2000 were set at 60 days with a bag limit of 15 birds. Shooting hours remained unchanged from the year before, allowing all-day hunting, except on opening weekends of each segment when hunting was restricted to afternoons only. A survey of resident license holders indicates that approximately 67,100 Louisiana hunters harvested slightly over 1.2 million doves during the 1999-2000 hunting season.

In addition to dove fields on Wildlife Management Areas, the Department leases property from private landowners for public hunting. This land is leased for public hunting on opening day only. In 1999, eight fields totaling 3,253 acres were leased. During the opening day hunt, 759 hunters participated, bagging 2,764 doves.

Quail

Two statewide population surveys were conducted this past year: the wing and hunter survey and the fall whistling survey. Hunters participating in the annual wing survey supplied 208 wings. From these wings, sex and age ratios were determined as well as peak hatching periods. Production per adult hen during 1999 increased by 49.3 percent from 1998. Higher production indices are usually

associated with wetter and cooler than normal summer weather. The summer of 1999 was favorable for bobwhite production in west-central Louisiana. This is the region that produces the majority of the wings that are submitted. In addition, hunters provided data on coveys found per hunt, bag, and crippling losses. Similar information was also obtained from Sandy Hollow WMA where daily check-in is required.

Statewide fall whistling counts were conducted on 41 randomly located routes and an additional six routes on Department WMAs and the Kisatchie National Forest. On a statewide basis, counts were lower (but not significantly) than last year.

Inferences about population status and habitat conditions were developed based on the combined results of these two survey techniques and general observations by Department personnel during the breeding season. Data are summarized in the Federal Aid W-55-14 Annual Report.

A survey of resident license holders indicates that approximately 4,600 Louisiana hunters harvested 36,900 quail during the 1999-2000 season.

Woodcock

A woodcock banding program was initiated in 1990 to determine sex and age ratios, site fidelity, movement patterns and harvest rates of woodcock wintering in Louisiana. From December 1998 to January 2000, 167 woodcock were banded on Sherburne WMA. Ten were reported recovered by hunters. Hunters on Sherburne also provided data on hunt characteristics through use of mandatory self-clearing stations. Data are summarized in the Federal Aid W-55-14 report.

The Department participated in the U. S. Fish and Wildlife Service Annual Woodcock Wing Bee in 1999. Data derived from aging and sexing about 9,700 woodcock wings are being used to develop trend data on woodcock production and hunter success. These data, in combination with breeding bird surveys, are used to develop management strategies for woodcock. Although woodcock are considered an underutilized species in Louisiana, hunters' harvest of woodcock actually ranks among the nation's highest. A survey of resident license holders indicates that approximately 5,500 Louisiana hunters harvested 24,700 woodcock during the 1999-2000 season.

Pheasant

Spring cock pheasant crowing counts were conducted in March and April 2000 to provide an index of the population. The average count of 19.2 calls/survey was about 57 percent higher than in 1999. The peak count was 14.3 percent lower. Refer to Fed. Aid W-55-14 Annual Report.

Rabbit

A project initiated in 1993 to determine the prescribed burning rotation for maintaining old field habitat in bottomland alluvial sites, was completed and a final report was submitted. The study found that plots burned on a threeyear rotation, rather than annually, provided better rabbit habitat. Data are summarized in the Federal Aid W-55-12 Annual Report. A survey of resident license holders indicates that approximately 63,000 Louisiana hunters harvested 631,200 rabbits during the 1998-99 season.

Deer

During the 1999-00 deer season, 267,500 white-tailed deer were harvested by 183,300 deer hunters in the state. On WMAs during managed deer hunts, there were 4,545 deer harvested. The total hunter effort for the managed hunts was 48,564. The Deer Management Assistance Program (DMAP) cooperators harvested 28,897 deer. There were 1,348 hunting clubs enrolled in this program.

Deer harvest information was entered into a computer program for analysis and evaluation and used to establish deer seasons for 2000-2001. Harvest data for WMAs and DMAP cooperators are summarized in Federal Aid W-55-14 Report. The Louisiana Big Game Recognition book was updated. December 31, 2000, marked the end of the 3rd Big Game Recognition Program. Trophy class deer continue to be produced and harvested on a regular basis in Louisiana.

Disease and parasite investigations continued on private and public lands. This work is in association with the Southeast Cooperative Wildlife Disease study in Georgia. A joint research project was completed with ULM which investigated the breeding season of deer in Area 4. Biologists presented results of management projects and studies at the Annual Southeast Deer Study Group meeting. Similar studies were begun in Areas 2 and 6. The Deer Section also participated in the Quality Deer Management Seminars in the state.

Waterfowl Inventory

Louisiana has approximately 3.5 million acres of coastal marsh that winter large and diverse waterfowl populations. Aerial waterfowl inventories of the entire coastal marsh, as well as associated agricultural lands in north central and northwest Louisiana, are conducted each winter.

The midwinter inventory indicated 5.1 million ducks and 616,000 geese wintered in the coastal marsh and inland areas of the Mississippi Delta during January 2000.

In the 1999-00 season, 107,000 hunters bagged 2.8 million ducks. This represents a one percent increase in the number of hunters, and an increase of greater than 10 percent in the duck harvest compared to the previous year. Species composition were: green-winged teal (24 percent), gadwall (18 percent), blue-winged teal (16 percent), mallard (14 percent), wood duck (11 percent), with scaup, pintail, shoveler, wigeon and ring-necked duck comprising most of the remainder.

Goose harvest declined by 17 percent in 1999-00 to 240,000. Snow geese comprised 67 percent of the harvest with white-fronted geese the majority of the remainder.

North American Waterfowl Management Plan

Louisiana is continuing to play an important role in the North American Waterfowl Management Plan (NAWMP). Portions of two NAWMP joint ventures are located in Louisiana: the Gulf Coast and Lower Mississippi Valley. The department has strived to maintain ongoing projects and other activities associated with the NAWMP.

The Louisiana Waterfowl Project, a private land wetlands development program, has completed its eighth year. This is a cooperative program involving LDWE, Ducks Unlimited, U.S. Department of Agriculture/Natural Resource Conservation Service, various pipeline companies, and selected private land owners. The U.S. Fish and Wildlife Service became a partner in 1999-00. The program was expanded, a biologist position with Ducks Unlimited created, and the LWP-South was formed. During 1999 alone, 30 landowners participated in LWP with 100 water control structures installed resulting in the restoration or enhancement of 4,020 acres and greater than 50,000 acres of technical assistance.

Wood Duck

During 1999, the Department banded 1,750 wood ducks, an increase over the 1,413 banded in 1998. Approximately 1,233 of these birds were captured with cannon nets and the remainder were nesting hens banded in wood duck nest boxes.

The wood duck box program completed its tenth year in 1999. An additional 112 boxes were installed on Department WMAs. There are greater than 2,800 boxes in use now; 1,167 of these are within Region 6. Box utilization by nesting wood ducks was high this year and ranged from 45 to 100 percent with an average of 80 percent. It is anticipated that an additional 150 boxes will be added in 2000.

Wild Turkey

Department biologists reported a good hatch in 1999 over most of the state and anticipate a stable population. During 2000, six wild turkeys were trapped for restocking efforts. These birds were released in Beauregard Parish. An additional 36 turkeys were caught on Sherburne WMA and 16 were captured on Ben's Creek WMA. These birds were banded or radio-tagged and released on site as part of ongoing research projects.

The most recent hunter harvest survey indicated 19,000 turkey hunters harvested 8,000 wild turkeys during the spring of 1999. The wild turkey population in Louisiana is estimated at about 80,000 birds.

The voluntary turkey check stations continued to produce valuable information on wild turkeys throughout Louisiana. About 15-20 percent of the wild turkey harvest is reported at the 143 check stations. This information allows the Department to determine population trends, age classes of harvested wild turkeys, weights and other factors which assist in making management decisions. During the 2000 spring gobbler season, a record high 1,900 wild turkeys were recorded at these check stations.

The poult production survey indicated an excellent hatch during the spring/summer of 1999 across most of the state. The only exception was the Florida Parishes in southeast Louisiana where the hatch was rated as good.

The Department continues to monitor for disease and parasites in order to anticipate local problems with the wild turkey flock

FUR AND REFUGE DIVISION

Active marsh management is the primary responsibility of the Fur and Refuge Division. The division owns and is directly responsible for 12.5 percent of coastal Louisiana, which serves as test sites for marsh management strategies designed to enhance vegetation productivity, stabilize isohaline lines, limit saline encroachment, reverse marsh deterioration, and provide productive wildlife habitat. In addition, management expertise and guidance is provided to private owners of considerably more marshland. Professional expertise is provided for the implementation of international, federal, and state legislation and regulations governing wise use of alligators, furbearers, coastal marshlands, and other important wildlife and fisheries resources; with emphasis on several commercially important species the Department has primary responsibility for and all of which contribute to a wetlands sustainable-use conservation initiative.

Responsibilities of the division are divided into six major categories: Land Management; Species Research and Management; Publication/Cooperative Research/Technical Assistance/Science Information Work; Ecological Services/Urban Wildlife; Scenic Rivers; and Natural Heritage.

LAND MANAGEMENT

Land Management on the division's four coastal refuges and five wildlife management areas is primarily directed toward improving wetlands vegetation productivity which in turn benefits resident and migratory waterfowl as well as many wetlands ecosystem-based animals (furbearers, mammals, reptiles, amphibians, freshwater fish, estuarine organisms, and game and non-game birds).

One important facet of land management on coastal marshes is monitoring mineral activities. Each activity is individually reviewed and must comply with the Department's mineral regulations, deeds of donation, and various agreement letters.

Ecological monitoring is also conducted in association with marsh management projects to provide guidance to various landowners in management decisions. Information on precipitation, water levels, and salinities is used for management on division properties and adjacent private properties. Daily rainfall records are submitted to the National Weather Service. Water level and salinity stations are monitored by monthly or weekly inspections or continually by electronic data recorders.

Rockefeller Wildlife Refuge

Rockefeller Wildlife Refuge continues to be a leading innovator for coastal marsh restoration and enhancement technology, and a prime example of how intensive management can protect and enhance coastal wetlands for fish and wildlife. Rockefeller continues to stay on the cutting edge of coastal marsh issues, from the earliest marsh management activities to the latest recommendations regarding 3-

D seismic activity, with the understanding that vegetation productivity holds the key to long-term health of the wetlands ecosystem.

Marsh Management, Restoration and Mineral Management

Rockefeller's staff maintains over 200 miles of levees and 40 water control structures which result in conservation of approximately 76,000 acres of refuge wetlands, and additionally enhances water management capability of 100,000 private sector acres within the Mermentau River Basin. Work includes intensive manipulation of structures to control water and salinity levels within 12 large units managed for optimum vegetation, fish, and wildlife production. Objectives of maintenance and manipulation of the refuge's system of levees and water control structures vary somewhat by management unit, but generally goals are to maintain marsh health and provide conditions favorable for production of waterfowl food plants.

Water level and salinity management became an important issue as a result of drought conditions across south Louisiana during fiscal year 1999-2000. Rainfall amounts at Rockefeller refuge from January to June, 2000 were 14.19 inches, which was 50 percent below the seven year long term average. Structures were closed to conserve fresh water and protect against salt water intrusion. Rice and crawfish production areas north and west of the refuge were negatively affected by the drought. Farmers were unable to pump water on rice fields and crawfish ponds. Profiling and monitoring areas north of the refuge documented that saline water did not encroach from refuge structures, but from naviga-

tion structures at Catfish Point, Fresh Water Bayou, and Leland Bowman Locks located in the Mermentau Basin.

Six marsh projects enhanced 37,430 acres during fiscal year 1999-2000. Projects included levee refurbishment, road repairs, terrace building, and terrace planting.

The 3.1 million dollar levee refurbishment project continued during 1999-2000. Approximately 48 miles of levee are being lifted and reshaped. Work locations include Units 2, 3, 4, 5, and 6 which total 29,180 acres.

The south levee of Price Lake was lifted and reshaped and the west road was lifted and overlaid with calbase. These activities improved management capabilities within the 7,500 acre management unit and also improved hurricane protection for both refuge and adjacent private property.

The east Unit 1 road was overlaid with calbase to provide access to the pump on the south side of the management unit. This project improved storm protection and management capabilities on 1,250 wetland acres. The south Unit 15 levee was damaged from Tropical Storm Francis during September 1998. The levee was repaired during fiscal year 1999-2000. This project improved storm protection and management capabilities on 900 wetland acres.

Six thousand feet of marsh terraces were constructed within Unit 5 during fiscal year 1999-2000. Forty-five hundred feet of the terraces were planted during the same time period. The terraces were planted with oyster grass (*Spartina alterniflora*) that was donated by the Natural Resources Conservation Service. Terracing is a relatively new wetlands management strategy and Rockefeller Refuge is conducting applied research to determine benefits from terracing.

As a general rule 15 to 35 percent of the refuge is control burned annually. Control burns were conducted in Unit 1 and 14 this fiscal year which encompassed five percent of the refuge. Burning was implemented in these areas to open the marsh and improve waterfowl habitat. No additional burning occurred due to the continuance of a research project studying invertebrate abundance, bird use, and avian foraging ecology on the refuge.

Normal burning practices will resume during Fall/Winter 1999.

Approximately 100 oil/gas wells have been drilled on Rockefeller refuge since 1950. One well was drilled during fiscal year 1999-2000. Rockefeller has a model mineral development program to assure that mineral exploration and production activities are compatible with wetlands management activities. A group of Mexican dignitaries visited Rockefeller during fiscal year 1999-2000 to learn about Department rules and regulations concerning all aspects of mineral development activity.

Plug and abandonment of existing oil/gas wells is a major component of any successful mineral management program. Rockefeller personnel began working with Pennzoil/Devon Energy during fiscal year 1999-2000 to remove all hardware from approximately 10 wells with no future utility. Negotiations also began with an oilfield contractor to plug and abandon a well in Unit 3 which has been a high priority environmental action item for Rockefeller Refuge.

A successful nuisance alligator removal program was conducted on Rockefeller Refuge during September 2000. Nine hunters removed their quotas of alligators (360 total) during a nine day period. Adult size (greater than 6') alligators comprised 92.8 percent of the harvest. Within the adult segment males comprised 76.6 percent and females 23.4 percent. The average length for all alligators harvested was 7.78 feet.

Alligator trappers are required to trap furbearers on Rockefeller refuge as a condition of their alligator trapping permit. This system works well since experienced watermen from the community that are familiar with the refuge and associated regulations harvest both furbearers and alligators. All trappers own specialized equipment that is necessary to participate in both harvest programs. Trappers removed 897 nutria, eight raccoons, seven otter, and two mink during the 1999-2000 fur trapping season.

Marsh enhancement units managed by structural means have proven popular with sports fishermen, resulting in overcrowding in many places. Damage to levees and alterations of automatic features of structures that regulate water salinities and levels has been a problem. Additionally,

heavy public usage has placed a strain on boat launch and parking facilities. According to data collected in 1999 - 2000, it was estimated Rockefeller Refuge experienced approximately 116,002 man-days of public use. Of this approximately 112,439 man-days were used for consumptive use, and about 3,563 were used for non-consumptive activities. Rockefeller staff completed construction of approximately 2.5 miles of earthen terraces in Unit 5 to prevent further erosion of lake banks in area of open water on the east side of the unit. Staff is continuing to acquire coastal-use permits to construct terraces in Unit 4.

Rockefeller Refuge was selected by the USDA-ARS Honey Bee Breeding, Genetics, and Physiology Laboratory as an isolated mating station for honey bees. Their pre study revealed that the unit 14 area did not have a population of wild honey bees. Therefore, selected queens and drones were crossed without mismating to other than intended genetic lines of honey bees.

The Refuge was used in the autumn of 2000 to propagate a stock of honey bees with genetic resistance to parasitic tracheal mites. In the spring of 2000, the refuge was used extensively to propagate imported Russian honey bees that have genetic resistance to parasitic varroa mites.

Marsh Island Refuge

Marsh Island Wildlife Refuge is located in the center of Louisiana's Gulf coastal marshes. The Island is primarily comprised of brackish marshes, supporting a wealth of resident fish and wildlife species and wintering habitat for thousands of migratory waterfowl, geese and shorebirds.

Recreational activities on Marsh Island Wildlife Refuge include recreational fishing, crabbing, shrimping, boating, and bird watching. Nearly 11,820 user-days of recreation were spent on the refuge during Fiscal Year 1999-2000. Of these, approximately 10,630 days were for consumptive use, while only about 1,190 were for non-consumptive activities.

Major repairs were conducted on the Marsh Island Headquarters this year, including the installation of new aluminum windows, screen doors, new thresholds and painting. The exterior of the building was insulated, covered in vinyl siding, the porch was painted, re-screened and light fixtures

were changed. Limestone was placed underneath the building and around its perimeter.

MANAGEMENT AND RESTORATION

During this fiscal year, water was held at marsh elevation in both the east and west impoundments to attempt to stop emergent vegetation from encroaching into marsh ponds. Rainfall was limited to 26.98 inches this year; hence, water levels remained below the marsh floor allowing continued encroachment of emergent vegetation into ponds. Habitat was enhanced on 8,000 acres in these impoundments.

Due to improved water management in the Northeast and Southeast units, preliminary results indicate that more annual grasses were produced in 1999-2000 than in previous years. In both units, emergent vegetation increased and submerged aquatics were more abundant. In January 2000, portions of these experimental units were burned to decrease invasion by woody species, increase the production of preferred wildlife food plants, and decrease the possibility of an uncontrolled wildfire. These units had not experienced a controlled burned since 1994. Later in the spring, the majority of the 200 sampling stations were re-worked or replaced due to fire damage. These units provided a wealth of waterfowl foods for wintering ducks. Vegetative composition and relative abundance will be closely monitored within the 200 sampling stations following the recent prescribed burn. Species composition for both emergent and aquatic plants increased in diversity and is indicative of fresher conditions.

The 5-acre shorebird-nesting island in Lake Platte was maintained by controlling emergent vegetation and placing some 30,000 cubic yards of shell on the island. This year, approximately two-thirds of this island was suitable for shorebird nesting. Nesting activity by approximately 500 black skimmers, 450 gull-billed terns and 50 black-necked stilts was noted in the spring of 2000.

Approximately 35 percent (26,600 acres) of Marsh Island was enhanced through controlled burning during 1999-2000. This burning resulted in the production of three-cornered grass, an important food source for wintering snow geese. Competition between emergent vegetation and SAV's along the pond edges was also reduced, which provided more pond area for waterfowl.

Results from a November 1999 survey are as follows: 1,380 Mallards, 60 Mottled Ducks, 4,200 Gadwalls, 80 Wigeon, 2,600 Green Wing Teal, 130 Northern Shovelers, 75 Northern Pintail and 28 Hooded Mergansers for a total of 8,553 birds. Also observed were 30,500 Snow Geese.

Environmental monitoring equipment on Marsh Island included 12 constant water level and salinity recorders deployed throughout the Island to provide base line data necessary to make management decisions. These data also provide insight into distribution and abundance of waterfowl, furbearers, and alligators. Water level and salinity data from 1986 through 1999 were entered for computer analysis. A weather station at the headquarters collected meteorological data, which complements other data collected. Water levels and discrete salinities were taken at the water control structures along with some rainfall data.

Selected areas of marsh were surveyed for impacts of the burning program and vegetative succession following muskrat and nutria damage. Nutria and muskrat populations continue to decline on the refuge; the winter trapping program is continuing on the refuge with limited success. The results for the 1999-2000 trapping season are as follows: 42 nutria, one muskrat, five mink, 20 raccoon and 76 otter. Areas especially on the east and southeast side of the refuge have totally recovered from nutria and muskrat damage. These areas encompass some of the more fragile marsh of the refuge.

The engineering work for the Lake Sand Project is in the final stages, involving a number of meetings and field trips. Meetings with Exxon are continuing with recent mineral exploration in the Lake Sand Field.

Plans for a shoreline protection project using 3,000 feet of rock jetties (approximately 1,500 feet on either side) is continuing for the mouth of Bird Island Bayou. This project is slated to begin in the spring of 2001.

Five permanent benchmarks were installed on the refuge by John Chance & Associates. These monuments are located on the Headquarters Island, in the Lake Sand Area, and near Lake Lucien and are associated with a coast-wide, elevation-benchmark network.

RESEARCH

Susan Mopper with the University of Louisiana at Lafayette (ULL) is continuing research of Iris populations on Marsh Island. The Iris project has three major facets: 1) monitoring, field observations, and experiments on Marsh Island, 2) common garden and greenhouse experiments at the Center for Ecology and Environmental Technology (CEET) and 3) genetic and chemical laboratory analysis at ULL. On the island, researchers are also monitoring soil pore water salinity levels for variation among and within sites. Monitoring of insect populations and collecting individual iris leafminers (*Cerodontha iridiphora*) and lizard beetles (*Loberus impressus*) for experiments continue. One paper has been published describing the Loberus larvae (Carlton et al. 2000), and another is in preparation describing the insect's interaction with fungi that occur in iris seedpods. Preliminary experiments are continuing on the effects of deer floral browsing on iris reproduction. Findings indicate that over two seasons of flowering, deer consume over 98percent of the iris flowers produced on the island. A preliminary genetic survey on the Marsh Island iris populations indicated that all surveyed populations (patches) are genetically variable and not monoclinal.

Research associated with the experimental management units was continued during this period. Research requires continual monitoring of water level and salinity inside and outside these units as well as annual vegetation transects and periodic aerial photography. Vegetation transects were established in October 1993 and are repeated annually.



Alligator research continued with a harvest of 784 alligators during July 1999, having an average length of six feet two inches. Approximately 11,477 alligators have been harvested since 1986. This research program includes night counts, nest counts, assessment of growth rates, hatchling releases, and data analysis

Marsh Island is being used by the USDA-ARS HoneyBee Breeding, Genetics and Physiology Laboratory (Baton Rouge, LA) as an isolated mating station for honeybees. The island has no wild honeybees living on it and is separated from existing populations of honeybees by several miles of open water or salt marsh. Therefore, selected queens and drones can be crossed on the island without mis-matings to other than intended genetic lines of honeybees. Marsh Island was used extensively in the autumn of 1999 and spring of 2000 to propagate imported Russian honeybees that have genetic resistance to parasitic varroa mites. USDA researchers and a cooperating commercial beekeeper had bees in place for most of the beekeeping season (March through October), and made approximately 16 trips to manage the mating station. Some of the queens mated on the island were used in a multi-state research project that yielded data used to refine the Russian-bee breeding program. Other queens were distributed as breeding sources for commercial queen producers around the country. This type and level of activity is expected to continue for the foreseeable future.

Andy Nyman and Joy Hunter with ULL conducted field surveys of Marsh Island in the North Managed, South Managed, Bayou Michael, and Lake Lucien areas. Samples of submerged aquatic vegetation (SAV) were collected in 24 ponds approximately every 6-8 weeks throughout 1999 and 2000. Field survey consisted of sampling for cover of submerged aquatic vegetation by raking pond bottoms and sieving sediment cores. The purpose of the study was to determine seasonal changes in SAV abundance. Herbivory exclosures constructed in the 1998 were also monitored throughout 1999 for the purpose of estimating the effect of waterfowl herbivory on SAV's.

No clear winter decline in SAV abundance was reported. Submerged aquatic vegetation was generally more abundant in managed areas but varied among areas and over time. Management was

more effective in increasing SAV abundance in the North Managed area than the South Managed area even though both areas were managed the same. The difference in effectiveness probably results from differences in local drainage patterns attributable to spoil banks. Joy Hunter (M. S. thesis 2000, U.L. Lafayette) concluded that water level governed SAV abundance at Marsh Island. Submerged aquatic vegetation cover decreased with increasing water level probably because deeper water decreased light availability.

Tommy Michot with the US Geological Survey conducted aerial waterfowl counts throughout 1999 and 2000. This waterfowl data has not been statistically analyzed, however waterfowl numbers were greater in winter 2000 than the previous year (peak of 3,000 ducks total species (2000) < 1,000 in 1999). Peak waterfowl months were November through February then dropped off to almost nothing. There does not appear to be much difference between Bayou Michael and Lake Lucien areas, and North managed and south managed areas in waterfowl population. In 2000, however, Lake Lucien had higher numbers of ducks than in Bayou Michael area, and the North Managed area had more ducks than the South Managed area. There is no clear management pattern to waterfowl numbers.

State Wildlife Refuge

This refuge, located on the western shore of Vermilion Bay, consists of 13,000 acres of brackish marsh. Management is directed toward providing wintering habitat for waterfowl. Significant numbers of ducks and geese utilized State Wildlife Refuge during 1999-2000. Major repairs were conducted as needed on all Refuge facilities and equipment. The crewboat Mr. McIlhenny was maintained and utilized on a regular basis.

MANAGEMENT AND RESTORATION

Eight fixed-crest weirs are used to control water levels on the refuge, enhancing and protecting approximately 10,000 acres. All weirs were monitored periodically and appropriate maintenance was conducted. Major repairs were made to the Hog Bayou weir, including the extension and reworking of the wing walls. This weir controls water levels on the southern third of State Wildlife Refuge. Recreational usage at this weir is substantial. Red Fish Point, North Lake, and South Lake weirs, however, continue to be in need of repair.

<u>HABITAT TYPE</u>	<u>MAIN DELTA (ACRES)</u>	<u>WLO DELTA (ACRES)</u>	<u>TOTAL (ACRES)</u>
Fresh Marsh	3,006	3,081	6,087
Submerged aquatics	7,543	6,935	14,478
Mud Flats	2,749	1,418	4,167
Forested	413	132	545
Scrub-Shrub	<u>1,455</u>	<u>105</u>	<u>1,560</u>
TOTAL	15,166	11,671	26,837

Salinity and water level data is collected at established stations on a bi-weekly schedule. A weather station was installed at the headquarters and collects meteorological data, which complements other data, collected. Two YSI 6000 continuous data recorders were installed on the refuge, one at Tom Bayou and the other at Hell Hole Bayou. This data collection equipment records water level, salinity and temperature on an hourly basis. Also, USGS installed a real time data logger near the boat shed, which records water level, salinity, water temperature and some meteorological parameters.

Two permanent benchmarks were install on the refuge by John Chance & Associates, one located on the southwest corner of Lake Portage and the other next to the boat shed by the headquarters. These two benchmarks are associated with a coast-wide, elevation-bench-mark network.

To enhance habitat, approximately 80 percent of the refuge was burned according to carefully controlled plans and supervision during the winter 1999-2000. Muskrat and nutria populations were on the increase during 1999-2000, resulting in some trapping on the refuge. However, trapping was limited due to the weather conditions and trapper availability. Results from the 1999-2000 trapping season are as follows: 322 nutria (55 were released), 32 muskrat, four raccoon, and three otter.

Results from a November 1999 aerial waterfowl survey are as follows: 1,040 Mallards, 340 Gadwalls, and 725 Green Wing Teal for a total of 2,105 birds. Also observed were 12,075 Snow Geese.

Public use activities on State Wildlife resulted in

an estimated 13,140 user-days for 1999- 2000. Of

this, approximately 11,355 man-days were for consumptive use, while only about 1,785 were for non-consumptive activities.

Atchafalaya Delta Wildlife Management Area

The Atchafalaya Delta Wildlife Management Area consists of approximately 137,000 acres of shallow water bays and marshes. Approximately 15,000 acres of subaerial land occur on the Main Delta and some 12,000 acres of subaerial land occur at the Wax Lake Outlet Delta. Most of the subaerial lands include submerged aquatics, fresh marsh, and exposed mudflats.

Common plant species in fresh marsh include delta duck potato, freshwater three-square, cattail, and panic grasses. Forested and scrub-shrub areas are commonly vegetated with black willow and wax myrtle. Submerged aquatics inhabiting shallow open water areas typically include various pondweeds and eelgrass.

A significant turnover in staff again occurred this fiscal year. Two Wildlife and Fisheries Technicians (Jody Stanford and Shanon Soileau) resigned their positions to accept other more lucrative job opportunities. So far, their positions have not been filled.

MANAGEMENT AND RESTORATION

Routine dredging of the Atchafalaya River Channel between Breaux's Pass and God's Island by Corps of Engineers' (COE) contractor Weeks Marine took place in November and December 1999.

Approximately 620,000 cubic yards of material were dredged and deposited at an elevation between 3.5 and 4.0 NGVD at the terminus of Natal Island. A total of some 3,500 linear feet of material were added to the existing peninsula at Natal Island. Following

completion of disposal, the contractor cut two 200-foot wide trenches 1,500 feet apart across the new peninsula. The trenches were dredged to a depth of 0.0 NGVD in an attempt to insure that they contained water at all times, to allow access by waterfowl hunters and to improve fishery organism movement. By June 2000, the new dredged material had settled and what remained was an area of approximately 3.5 acres of exposed sand and silt which was being nested upon by some 900 black skimmers, 240 gull-billed terns, and 340 forster's terns. In a follow-up interagency meeting, it was agreed that future dredging/disposal events would include dredging trenches 200 feet wide to a depth of -2.0 NGVD every 1,000 feet of new spoil material. It is believed that these new disposal parameters will enhance fishery organism movement and wintering habitat, especially for the saltmarsh topminnow (*Fundulus jenkinsi*). Doctor's Bruce Thompson and Gary Peterson of LSU have initiated a study of the occurrence and distribution of this species on the Main Delta. This species is known to prefer habitat available at emerging deltas like that at the Atchafalaya Delta and is considered a "candidate species" for possible listing as federally threatened or endangered.

The National Marine Fisheries Service-sponsored project on the east side of the Atchafalaya River at the Main Delta, called Freshwater/Sediment Delivery via Castille Pass, was selected to move into Phase 1 under the CWPPRA Process. This phase allows preliminary planning, design, and cost estimation to see if the project warrants being selected to enter Phase 2, advanced engineering and design.

Inspection of two formerly constructed CWPPRA projects on the Main Delta (i.e., Atchafalaya Sediment Delivery at Natal and Castille Passes and Big Island Mining - creation of Breaux's Pass) by an interagency work group found that all channels that had been constructed/deepened to deliver water and sediment to shallow areas in Atchafalaya Bay appeared to be maintaining reasonably good depths. The channels should continue to deliver freshwater and sediment and, hence, serve to build and nourish marsh well into the future.

ADWMA staff spread some 10,000 pounds of 13-13-13 fertilizer and 4,000 pounds of winter wheat, oats, and clover on approximately 30 acres of disked rights-of-way on the Big Island to attempt

to establish some winter forage for the deer population. The extreme drought conditions that prevailed, however, led to extremely poor germination seed.

St. Mary Land Company retained Berry Brothers of Morgan City to dredge and deposit material to build up the tent campground at the Wax Lake Delta. In addition, they hired Berry Brothers to install 90 additional pilings (furnished by LDWF) on Campground Pass at the Wax Lake Delta.

This year, two un-permitted (illegally-moored), sunken houseboats at Little Beach Bayou were removed from the water by the Department. A decision has been made to no longer allow houseboats to moor in Little Beach Bayou because this waterway is remote, does not lend itself well to "policing", and has become an attractive area for unscrupulous members of the public to leave "unwanted vessels/houseboats. In addition, another houseboat sank in Catfish Pass at the Main Delta; however, it has not been removed from the water because the "clam-bucket" apparatus needed to pick it up has not yet made it to the Main Delta.

A revised houseboat permitting system for ADWMA was developed which now requires annual renewal of mooring permits. Further, before a mooring permit can be issued, the houseboat owner must have a permit or letter of certification from the St. Mary Parish Health Unit verifying that the houseboat has "an approved sewerage disposal system on board."

The U. S. Geological Survey (National Wetlands Center) in Lafayette assisted the Department in developing aerial maps of the Wax Lake Outlet and Main Deltas. Some 10,000 copies of this map were reproduced by the LSU Graphic Services Department, at a cost of about \$0.15 each, for distribution to the public

One of the four trappers that had been selected to trap furbearers and to hunt alligators on ADWMA last year was dismissed from the Delta because of his failure to make an adequate attempt to harvest furbearers. Extremely depressed fur prices led to the removal and sale of only 585 nutria, 17 raccoons, and one otter by the three remaining trappers. During September 1999, 112 alligators (averaging 7 feet in length) were harvested. The gators were sold at a price of nearly \$17,000, yielding some \$4,200 in revenue to the Department.

Public usage surveys indicated that some 33,800 individuals utilized the ADWMA for consumptive and non-consumptive recreation this fiscal year. Some 12,400 days were spent commercial and sport finfishing, crabbing, and shrimping and some 13,350 days were spent harvesting waterfowl, deer, rabbits, snipe, gallinules, and rails. Further, nearly 8,050 visitor days were expended in non-consumptive pursuits such as camping, boating, bird watching, and nature study.

In the fall of 1999, 1,947 archery hunters harvested 80 deer yielding a hunter effort per harvest ratio of 24 to 1. This is the greatest number of deer harvested since the season originally opened in 1993. In 1999, 50 percent of the deer harvested were bucks and 25 percent of the bucks harvested had 8 points or better. In fact, three 10-pointers were harvested, the largest weighing 230 pounds. Also this year, 7 deer were harvested and the intestinal tracts examined to determine the "health of the herd." According to Deer Study Leader Dave Moreland, body weights are acceptable; however, abomasal parasite counts are higher than normal (suggesting that more deer need to be removed). ADWMA staff recommended a limited youth gun hunt to further reduce the herd size; however, David Morrison of the Wildlife Division fought vehemently not to allow this. Accordingly, a decision was made to lengthen the archery season to include the entire months of October, November, and December in the fall season of 2000 to attempt to remove more animals.

The teal season of September 1999 was fairly good, with 8,350 teal being harvested in 3,165 hunting efforts yielding a bird per 2.6 hunter efforts. Some 90 percent of the teal harvested were male blue-wings.

On November 4, 1999, an aerial waterfowl survey counted some 105,000 ducks on the ADWMA, 65,000 at the Main Delta and 40,000 at the WLO Delta – the primary species included pintail, gadwall, mallard, wigeon, and green-wings. During the two splits of the regular waterfowl season some 7,450-hunter efforts were expended in harvesting 23,200 birds, yielding 3.1 birds per hunter effort – the primary species harvested included green-wings, mallards, gadwalls, and pintails. An aerial waterfowl survey on January 20, 2000, counted some 110,000 ducks, 30,000 at the Main Delta and 80,000 at the WLO Delta – the primary

species included gadwalls, mallards, canvasbacks, and green-wings.

Surveys of "Waterbird Nesting Colonies" were not conducted this fiscal year due to funding constraints at both the federal and state levels.

MINERAL ACTIVITIES

El Paso, Inc. acquired the active production platform immediately northwest of the ADWMA Headquarters from SONAT GOM. It drilled what was to be a "development well" to its existing producing unit off the terminus of Pass "C" at the western end of Breaux's Pass. After spending some eight to nine million dollars, it was determined that the well was a dry hole.

OTHER ACTIVITIES

At the request of adjacent landowner Mr. Edward Lobman (an attorney from Morgan City), and with the help of personnel from the State Land Office, we initiated posting the common boundary along the southern shoreline of Shell Island. After only one day, work was called to a halt by the State Land Office who believed that it had detected an error in the boundary alignment which, if it is correct, would actually mean that some 160 acres currently claimed by Mr. Lobman actually belongs to the State. Resolution of the matter is still pending.

At the request of Representative Jack Smith of St. Mary Parish, the Department issued a one-year "Experimental Permit" to Mr. Greg Guidry of New Iberia to operate an airboat on certain areas of the Main Delta to hunt waterfowl. Mr. Guidry is disabled, and the permit was issued in an attempt to satisfy requirements of the Americans with Disabilities Act.

Attempts were made by Secretary Jenkins and Assistant Secretary Bowman to acquire a portion of the oil and gas revenues accruing to the State from ADWMA to pay for management of the area. So far, these attempts have been unsuccessful; however, efforts will continue to be made in this regard in the future.

The New Iberia staff continued attempts to get Dr. Charles Sasser of LSU to remove his houseboat, the "Heather K", from the Main Delta. The vessel belongs to LSU, is deteriorating rapidly, is an eyesore, and is a significant liability. Thus far, staff has had no success.

Extreme drought conditions prevailed at the Delta as it did in much of the remainder of the State. Accordingly, at least three 20,000-gallon barge loads of potable water had to be transported to the Headquarters.

Twenty-one new four-foot-tall by six-foot-wide aluminum signs depicting deer, waterfowl, houseboat mooring, and camping regulations were installed at strategic locations at the Main and Wax Lake Outlet Deltas and at commonly used boat launching facilities.

Isles Dernieres Barrier Islands Refuge

Although a portion of Trinity Island is now available for public access, there is apparently little usage because of the remoteness of the area. Only two houseboat-mooring permits for California Canal were requested and issued this year.

Although Department personnel lobbied hard for inclusion of a second Phase of breakwaters at Raccoon Island, the project did not get selected for further engineering and design work this year.

MANAGEMENT AND RESTORATION

- An 8-foot-wide by 25-foot-long seismic/cable barge was acquired at a cost of \$18,000 to assist in the installation of signage on the barrier islands as well as other coastal Refuges and WMA 's.

- Over 30,000 linear feet of sand fencing were erected on Whiskey Island by a contractor to the Louisiana Department of Natural Resources using CWPPRA and FEMA money. In addition, some 50,000 plants were installed on Whiskey and East Islands. Vegetative species planted included *Spartina patens*, *Spartina alterniflora*, bitter panicum, black mangrove, and Roseau cane.

Surveys of "Waterbird Nesting Colonies" during 2000 yielded the following data:

Wine Island	Number of Nesting Birds
Brown Pelican	375
Laughing Gull	4,200
Sandwich Tern	2,300
Royal Tern	700
Black Skimmer	250
Caspian Tern	50

Whiskey Island West Sand Spit

Black Skimmer	1,500
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Raccoon Island

Brown Pelican	3,100
Sandwich Tern	1,350
Royal Tern	1,400

PASS-A-LOUTRE WILDLIFE MANAGEMENT AREA

Pass-a-Loutre WMA is composed of 110,000 acres of marshland and open water at the mouth of the Mississippi River in Plaquemine Parish.

MANAGEMENT AND RESTORATION

Some of the dredged material produced from routine maintenance dredging of South Pass by the Corps of Engineers was placed in open water areas of East Bay (west of South Pass) to enlarge previously created "barrier islands" and to create new ones. Some of the dredged material was also used to strengthen the levee separating the two impoundments and to enlarge and elevate the campground. All total, some 300 acres of subaerial habitat was created.

The "Delta Wide Crevasse Project", sponsored via the Coastal Wetlands, Planning, Protection, and Restoration Act, was implemented and resulted in the construction of seven (7) new freshwater/sediment diversion projects on the area.

Construction of the bulkhead at the mouth of the boat slip on Dennis Pass was initiated, and the crewboat Canvasback was repaired.

A "permit station" was constructed on the Headquarters Island. Overnight tent campers are now required to fill out camping permits.

Teal season resulted in the harvest of some 1,775 teal with some 6,210 hunter efforts, yielding a harvest ratio of 3.5 birds per hunter. During the first split of the regular waterfowl season some 3,950 birds were harvested by 935 hunters, and during the second split 6,770 birds were taken by 1,825 hunters. This yielded a total harvest of 10,720 birds by 2,760 hunters for an average harvest of 3.9 birds per effort. The predominant species harvested included gadwall, green- and blue-winged teal, and wigeon.

Archery hunting this year produced a harvest of 30 deer (17 bucks and 13 does). Considering some 932-hunter efforts were expended, one deer was harvested per 31 efforts.

Some 35 nesting brown pelicans were counted of

the "mud lumps" of South Pass.

SALVADOR/TIMKIN WILDLIFE MANAGEMENT AREA

Salvador itself consists of some 30,000 acres of marsh along the northwestern shoreline of Lake Salvador in St. Charles Parish that was purchased from EXXON Corp. in 1968. Since that time, an additional 4,000 acre-area known as Couba Island was acquired under a lease from the New Orleans City Park Commission. The area has been named Timken after the family name of the original owner of the property.

MANAGEMENT AND RESTORATION

Marine Fisheries Division personnel continued to conduct fishery sampling on and in the vicinity of Salvador/Timken under a contract to the Corps of Engineers to assist that agency in establishing the pre-project conditions of the area prior to the "opening" of the Davis Pond Freshwater Diversion Project.

The Aquatic Plant Control Division continues to spray waterhyacinth in canals and bayous; however, it appears that these efforts are a losing battle.

Continuous data recording sampling of water for salinity, temperature, turbidity, and tidal changes continued. This year salinity levels on the area increased from an average of one ppt to five ppt – a five fold increase over normal.

Some 54 "experimental permits" were issued to recreationists requesting permission to use mud-boats with engines larger than 25 horse power in the Salvador canal/bayou system; one permit request was turned-down by the Enforcement Division. Field staff has continued to monitor the effects of these larger engines on bankline erosion. The results of this monitoring effort will be used to determine if these larger engines should continue to be allowed.

Because the area is only some 12 miles from metropolitan New Orleans, it provides much needed freshwater fishing, hunting, and sight-seeing opportunities to the residents of that city. Over the last year, the area hosted some 75,000 visitors coming to hunt fish, and sightsee.

Teal season resulted in the harvest of some 385 teal with some 425-hunter efforts, yielding a harvest

ratio of 1.1 birds per hunter. During the 1st split of the regular waterfowl season some 1,315 birds were harvested by 575 hunters, and during the 2nd split 2,645 birds were taken by 1,675 hunters. This yielded a total harvest of 3,960 birds by 2,250 hunters for an average of 1.8 birds per effort. The predominant species harvested included blue-winged teal, ring-necks, gadwall, and lesser scaup.

During the deer season "youth hunters" harvested two deer and some 1,000 "adult hunters" harvested 140 deer (65 bucks and 75 does). During the alligator season, the 8 authorized hunters harvested 456 alligators.

A number of nutria were harvested, and the meat was prepared for a promotion intended to encourage human consumption.

POINTE-AUX-CHENES WILDLIFE MANAGEMENT AREA

Pointe-aux-Chenes (formerly known as Point-au-Chien) initially consisted of a 29,000-acre tract of marsh purchased from EXXON in 1968. Since that time, additional acquisitions via long term leases from L.L.&E. (currently Burlington Resources), Fina LaTerre Corporation, and the Terrebonne Parish School Board have brought the total acreage up to some 32,000 acres.

In recent years, the area has suffered from rapid saltwater intrusion and, hence, marsh loss. Two portions of the area have been placed under intensive management using levees and flap-gated water control structures to combat the rapid marsh deterioration. Approximately 3,500 acres are under management in an area called the Montegut Unit, and 4,500 acres are under management in an area called the Grand Bayou Unit. The Montegut Management Unit was constructed by the Louisiana Department of Natural Resources (LDNR) via its coastal restoration program. Currently, however, this area has been maintained by the Department because of a lack of additional funding from LDNR. The Grand Bayou Management Unit was actually created as a mitigation project for the U. S. Army Corps of Engineers "Larose to Golden Meadow Hurricane Protection Project." This unit is also rapidly deteriorating because neither the COE nor the local sponsor (South Lafourche Parish Levee District) is willing to expend the money to refurbish the levees and water control structures.

Some 1,500 acres of the area are upland habitat, for-

merly cultivated for sugarcane. About 500 acres of this area have been reforested and provide good rabbit and deer habitat. Approximately 120 acres of this area are annually planted with brown top and Japanese Millet and are bush-hogged to attract mourning doves for public hunting.

MANAGEMENT AND RESTORATION

Water control structures at both the Montegut and Grand Bayou Management Units were manipulated to attempt a drawdown and to attempt to hold rainwater when it became available. A combination of drought (lack of rain) and vandalism; however, greatly limited successful water level management this year. As a result, available waterfowl foods were limited this year. Nevertheless, waterfowl numbers and harvest were much higher in managed areas than in un-managed areas.

A new parking lot and boat launching facility was completed on Island Road, near its junction with Highway 665 (Pointe-aux-Chenes Road). On the Point Farm Property, a new tractor/implement shed was constructed. The shed and implement storage area was fenced in to reduce vandalism.

Department personnel continued to assist federal agency representatives in developing a design for the U.S. Fish & Wildlife Service-sponsored Coastal Wetlands, Planning, Protection, and Restoration Act "Grand Bayou Project." When implemented, this project would complement water management efforts in the Department's Grand Bayou Management Unit.

Department staff initiated review of various possibly suitable sites for establishment of waterfowl blind site to host the upcoming physically handicapped lottery waterfowl hunts in the fall of 2001. A site was selected adjacent to a well-maintained shell road on the Point Farm Property.

Department staff at the field and administrative levels initiated discussions with local elected officials and fire district representatives in an attempt to develop an acceptable "land- swap arrangement" which would provide some three acres of Point Farm Property near the Montegut Elementary School to local fire districts to establish a fire-fighting training facility. The Department is completely supportive of the proposed land swap if the property to be received in exchange for the

above three acres is determined to be "equal in value."

Field personnel completed a "photo documentation report" of abandoned oil and gas facilities located on the WMA which need to be removed and cleaned up. The report was turned over to personnel in the New Orleans who are in charge of contacting the appropriate oil/gas operators and the Office of Conservation in the Department of Natural Resources to ensure that the appropriate cleanup is implemented.

Teal season resulted in the harvest of some 6,035 teal with some 3,350-hunter efforts, yielding a harvest ratio of 1.8 birds per hunter. During the first split of the regular waterfowl season some 18,880 birds were harvested by 7,360 hunters, and during the second split 15,580 were taken by 6,815 hunters. This yielded a total harvest of 34,460 birds by 14,175 hunters for an average of 2.4 birds per effort. The predominant species harvested included blue- and green-winged teal, gadwall, shoveler, and mottled ducks.

Four bucks are known to have been killed during the gun season this year. This number is certain to be low as there is no requirement that deer hunters no their kill be reported.

Lake Boeuf WMA consists of some 800 acres of forested and non-forested wetlands near Raceland in Lafourche Parish. The area was acquired via donation from the "Conservation Fund", a Maryland-based non-profit corporation. Fishing and waterfowl and deer hunting are the predominant recreational activities occurring on the area. The area is accessible to Department employees via the "Raceland Sugar Company" road system; however, it is accessible to the general public by water only.

MANAGEMENT AND RESTORATION

The Department prepared a map defining the boundary of the area and initiated distribution of the map to the general public.

In areas where the perimeter boundaries were known, Department personnel posted WMA signs; however, vandalism in the form of sign removal by adjacent landowners, lessees, or the general public has occurred.

Mineral Program

The mineral program on coastal Department properties under the jurisdiction of Fur and Refuge Division reviewed and evaluated 39 mineral projects during 1999-2000. Projects were individually reviewed and evaluated to ensure that the resulting activity was compatible from both an environmental and public usage viewpoint. In addition to review of mineral projects, the program coordinated the leasing of coastal Department properties, represented the Department at Mineral Board lease sales, coordinated servitude's, surface leases, and obtained any necessary permits for wetland management activities on coastal fur and Refuge properties.

Personnel with the mineral program also oversee the New Orleans Office, Fur and Refuge Division. The program is responsible for generating significant income for the Department through mineral leases, mineral royalties, servitude's and surface leases.

SPECIES RESEARCH AND MANAGEMENT PROGRAMS

Alligator Program

Louisiana's Alligator Management Program consists of two complex segments. The program includes research/management of wild population and a statewide farm/ranch research/management program. The program is funded by self-generated revenues which include tag and labeling fees, other alligator related fees and severance taxes on hides.

Aerial alligator nest surveys in 1999 indicated coastal alligator nest production (39,823 nests) was the highest recorded since the project was initiated in 1970, with the exception of 1997 (49,117 nests). The coastal survey is a very important tool which has enabled the Department to authorize the harvest of over 450,000 alligators between 1972 and 1999.

The annual wild alligator harvest (September 1999) produced approximately 36,500 alligators with a base value of over \$10.5 million. An experimental "bonus" tag program was started in September 1999 to target harvest of more four to five foot alligators, which are more numerous than larger alligators. Over "3000" bonus alligators were harvested averaging 5.75' in length. At the end of the 1999 calendar year, there were 65

licensed alligator farms/ranches in Louisiana. Statewide farm/ranch inventory, or number of live alligators, as of December 1999, was approximately 543,170. The 1998 harvest (September 1998-August 1999) on farms/ranches reached 154,000 with a base value of \$12 million.

During 1999 a total of 574,731 alligator eggs were permitted for collection in the Department's alligator egg collection program. Over 382,000 eggs were collected from which 332,428 alligators were hatched. As part of this program farmers are required to return 17 percent of the eggs hatched as four foot alligators. The remaining animals can be sold by the farmer. Release of juvenile alligators to the wild compensates for the collection of eggs. The release in 1999 amounted to over 44,000 alligators. The releases on these areas was carefully done, with all released alligators being measured, marked, tagged, and sexed. Preliminary re-trapping and harvest data indicate that farm released alligators grow at least as well as, and usually better than, their wild counterparts. Long term follow-up on the status of these farm-released alligators and comparison to wild tag returns will allow further evaluation of the program. Survival of farm-releases appears to be good. Numerous papers on these research findings have been published in the scientific literature by refuge staff members.

Inventory methods, harvest regulations, tagging requirements, reporting requirements, and a complex computer program are continually upgraded to regulate and monitor harvest of surplus alligators in Louisiana and distribute the kill, in proportion to existing populations, over the area open for harvest. New vegetative maps of wetland types (fresh, intermediate, brackish, saline, marshes and swamp habitat) were utilized to calculate hunter quotas for wild alligator harvest tag allotments. Intensive alligator nest counts were conducted on selected marshlands along the coast and average acres per nest calculated.

Over 2,750 "re-trapped" farm-released alligators were harvested in September 1999, and data evaluation continues on sex ratios and lengths of harvested alligators. Processing facilities were checked for "re-traps" of alligators released from farms or previously tagged in the wild. Several nine- and ten-foot size class alligators were harvested in 1999, which had been released from alligator farms and survived seven to eight years.

Continuation evaluation of survival of farm releases is ongoing.

A long-term study on natural sex ratios of alligators/nest temperatures was initiated in collaboration with the University of North Dakota. A pilot study in 1995 yielded excellent results with newly developed temperature recorders; and has been expanded in recent years. In 1997, 1998, and 1999 forty recorders were placed in nests at Rockefeller. Data are being prepared for a manuscript to be submitted for publication. March, April, and May average ambient temperatures are correlated with the time of alligator nesting, warmer temperatures bringing about earlier nesting effort. These studies will continue annually and are used to predict peak nesting times, critical information which licensed alligator farmers and landowners use to coordinate egg collection efforts.

The 1999 annual aerial nest count was accomplished on a 2,000 acre study area on Rockefeller. Nesting effort is related to water levels and salinities for the months of March through June. Over the last 10 years, alligators have utilized 10 to 31 acres per nest. In 1999, one nest occurred per 11.23 acres, a better than average nesting effort due to optimum water levels and environmental conditions.

A study was initiated in 1999 on post hatching growth of alligators as related to time of egg collection. Three wild clutches were split, with half the eggs being collected early (and being incubated at "optimum" temperatures artificially early) and the other half left in the wild. These were collected near hatching. Growth rates between the two groups were monitored this year through early 2000. We plan to enlarge the sample size with additional clutches in 2001.

A new study was initiated in June 2000 to evaluate onset of maturity in sub-adult alligators. A large series of blood samples will be collected from alligators to evaluate hormone levels, nutritional parameters, and potential for recruitment. This project will be done in collaborative with Dr. Val Lance of the San Diego Zoological Society.

A study was initiated in 1984 to research the endangered Chinese alligator on Rockefeller. The purposes were to develop culture techniques and

attempt successful captive propagation for this very rare species. One breeding pair acquired in 1984 is housed in a semi-natural enclosure.

Nesting was accomplished in 1999 with a clutch size of 22, of which 19 hatched. The hatchlings are being raised by the LSU Medical Center's Department of Biochemistry (Dr. R. Coulson) following research on growth in this species. The Chinese alligators did not nest in 2000, probably due to drought conditions.

A successful experimental alligator harvest program was conducted on Rockefeller Refuge during September 1999. Nine hunters removed their quotas of alligators (360 total) during a six day period. The overall average length was 7.85 feet.

The alligator research program on Marsh Island Wildlife Refuge continued. Since 1986 approximately 11,477 alligators have been harvested from Marsh Island. All alligators were sold whole to the highest bidder. Data analysis continues on sex ratios, size class frequency distribution, production rates and habitat utilization. Other alligator research being conducted on Marsh Island includes nest counts, night counts and tagging and release of alligators for growth rate estimates. Approximately 4,252 farm raised alligators and 8,951 hatchlings have been released since 1989 to assess growth and survival rates.

In 1996, Timken was incorporated into the Wildlife Management Area (WMA) program. Timken WMA is directly adjoining Salvador WMA and was subsequently incorporated into the Salvador experimental alligator harvest and research programs in 1996 and has continued through 1999. During July 1999, 457 alligators were harvested on Salvador and Timken WMA's averaging 6.4 feet in length. From 1991 through July 1999 a total of 3,444 alligators were harvested on these areas. The emphasis of this harvest has been to collect reproductive information to facilitate population estimation. This data will be analyzed and a new harvest plan developed for subsequent years. Other alligator research presently being conducted on Salvador and Timken WMA's include nest counts, night counts and tagging and release of alligators for sex ratio, growth rate and survival rate data. Over 4,700 wild alligators have been captured tagged and released and more than 2,600 hatchlings have been released on these areas.

Fur and Marsh Management Program Fur and Alligator Advisory Council

The Fur and Alligator Advisory Council completed its 14th year of operation in June 2000. The Fur and Alligator Public Education and Marketing Fund was designed to support programs to ensure a stable future for the state's fur and alligator industry. The Council and special fund exist because of serious problems facing Louisiana's fur trappers, alligator hunters and farmers, and major coastal landowners. The two major goals of the Council are: (1) education of the public concerning the role of trapping in wildlife conservation and the sustainable-use of the alligator and (2) market stabilization and enhancement for Louisiana's fur and alligator products. See the 1999-2000 Fur and Alligator Advisory Council Annual Report for a summary of projects.

National and International Issues

Division staff continued to represent the Department and the International Association of Fish and Wildlife Agencies (IAFWA) at numerous meetings concerning the international effort to standardize trapping systems for furbearers and to monitor and develop strategies to counter animal rights activities.

Currently one staff member participates on the IAFWA Furbearer Resources Task Force. This committee represents the 50 states and Canada on various issues pertaining to furbearer management. Topics include EU fur regulation, ISO trap standards, National Trapper Education Program, Best Management Practices for trapping, trap evaluation research, trapping outreach and other issues. During Fiscal Year 1999-2000 a meeting of the Furbearer Resources Technical Work Group was hosted at Rockefeller Refuge. Various subgroups of the subcommittee met at a variety of locations as well.

The Division continued to provide compilation of fur harvest data for the United States as requested by the IAFWA. Louisiana has served as a clearinghouse for this information for the past 12 years. This U.S. harvest data was originally published in a document by the Ontario Ministry of Natural Resources and later in a 10-year wildlife status summary completed by the U.S. Forest Service. A document entitled *A.U.S. Fur Harvest (1970-1992)* and *Fur Value (1974-1992)* Statistics by state and regions was compiled for the IAFWA Fur

Resources Committee in June 1994 and is updated periodically.

A division staff member traveled to Hungary in July 1999 to attend the Second International Wildlife Management Congress, where he presented a slide presentation entitled *Trapping, Furbearer Management, and the Development of Best Management Practices in the U.S.*

Staff spent time working on an issue in the U.S. congress concerning an amendment to the Interior Department appropriations. Congressman Farr, a California Democrat, authored this amendment. It would have prohibited use of funds by Interior to authorize, permit, administer, or promote the use of jawed leghold traps or neck snares on National Wildlife Refuges. This amendment was finally defeated in the Senate. This was another attempt by animal protectionists organizations to federalize management of wildlife, eliminate state management authority, and restrict or prohibit harvest.

Division staff met with USFWS in October 1999 to discuss alligator tags and CITES issues. They also met with members of the congressional delegation in February 2000 to discuss nutria control funding and alligator/CITES issues.

Monitoring Fur Harvest

Various projects were conducted to monitor annual furbearer harvest distribution and total harvest. Each year fur buyers and dealers are required to submit reports providing information on pelts purchased by species and parish of harvest. Annual audits of all fur dealers provide a record of total pelts by species shipped from Louisiana. River otter and bobcat possession tags provide data on timing and locations of all bobcat and otter harvested in the state. These tags are necessary to insure that only La. otter and bobcats are tagged with federal export tags (a federal requirement for out-of-country shipment).

A total of 39,971 furbearer pelts valued at \$207,364 were harvested during the 1999-2000 trapping season. In 1999-2000 fur prices and harvest were dramatically lower than the prior year. The harvest of nutria decreased by 94,536 from 114,646 to 20,110 while the price decreased from \$2.69 to \$2.10. The majority of the nutria harvested in 1997-98 was marketed in Russia and collapse of the Russian economy in September 1998 greatly reduced the

demand for nutria pelts during the past two seasons.

Nutria Damage

During May and December 1993 a survey was conducted to assess the impact of nutria feeding activity in the Barataria-Terrebonne Basin. The department and the Barataria-Terrebonne National Estuary Program funded this project. Ninety-one impact sites, affecting 15,500 acres, were located and mapped. Recovery of damaged areas, between May and December, was less than expected. Additional surveys were conducted in western Terrebonne Parish in spring 1995 and in the Caernarvon Freshwater Diversion Study Area in May and December 1995. The entire Barataria-Terrebonne Basin was surveyed in March/April 1996. More than 20,000 acres of damaged marsh were detected along the transects flown in 1996.

In 1998, the first coast wide nutria herbivory survey was flown, as part of the Nutria Harvest and Wetland Demonstration Program. A total of 23,960 acres of damaged wetlands were located along the survey transects.

In 1999, the damaged area increased to 27,356 acres. When extrapolated, the coast wide damage was estimated to exceed 100,000 acres.

During the Spring 2000 survey 170 sites were visited. Thirty-eight sites were considered recovered and 132 had impacts. An estimated 25,939 acres were impacted by nutria feeding activity along these transects. Terrebonne contained 50 percent of the damaged acreage, Jefferson-20 percent, Lafouche-14 percent, and Plaquemines-eight percent. The rest of the damage was spread across seven other parishes. The total acreage damaged (25,939) was 5.2 percent lower than in 1999. The best extrapolated estimate for damaged acreage is still 100,000 acres.

Nutria herbivory is playing a major role in the coastal marshes of Louisiana. Direct vegetation removal contributes to permanent loss of vegetated wetlands; however, vegetative loss is not the only impact observed. Nutria grazing is currently and has likely historically played a major role in affecting plant species composition throughout the coast.

Survey results strongly support the need for the

development of a trapping program that will facilitate significantly higher nutria harvest. The Louisiana Fur and Alligator Advisory Council will continue to conduct fur marketing projects to encourage improved prices to trappers, but more is needed.

Nutria Meat Marketing

The Nutria Harvest and Wetland Demonstration Project was approved through the Coastal Wetlands Planning, Protection, and Restoration Act in 1997. This five year project was initiated in 1998 and has been comprised of three major components: 1) Plan, develop and conduct various nutria meat marketing activities, 2) Conduct a coast wide nutria herbivory survey, and 3) provide incentive payments to trappers and nutria meat processors for three seasons (1998- 99, 1999-2000, 2000-2001). The budget established for this project was \$2.1 million:

- \$300,000-Promotion and marketing
- \$300,000-Coast wide nutria damage survey
- \$1,500,000-Incentive payments for trappers and processors

In 1998 projects were carried out with funding provided through a MIPR with the COE until the Interagency Agreement was finally signed in 1998. The first large promotion was conducted in spring 1998 when the department participated in an International Food Show in Tokyo. Chef Philippe Parola, Baton Rouge, presented this promotion through a department contract. The department began distributing meat to interested chefs, restaurants, and distributors. Participation included National Hunting and Fishing Day and a number of other promotions. This first year included internal discussions considering the priorities for in-state, national, and international promotions.

During June and July, 1999 the department contracted with Chef Parola to carry out a promotion at the Cajun, Creole, Jazz Festival at the Carleton Hotel in Taipei, Taiwan.

The first introduction of nutria to the Pacific Rim was successful with an article in the China Post and an article in Gourmet World Magazine September 1999 issue.

During late July and early August, 1999 the department participated in the La. Restaurant Association Food Service Expo in New Orleans.

This is one of the top regional restaurant shows with 380 exhibitors and 13,000 visitors.

In September 1999 the department also contracted with Chef Parola to participate in the America Food Festival with the US Ag. Trade Office (ATO) in the three largest cities in Taiwan- Taipei, Taichung and Koshiuing.

Division staff and Chef Parola worked with Cooking Lite Magazine on an article on nutria meat nutrient and recipes. An article appeared in the January 2000 issue with a circulation of 1.4 million.

During November 1999 the department contracted Dwane Byers to arrange for a Chinese Delegation to visit the state to explore purchasing nutria and alligator meat, leather, and fur. Mr. Sun Changzhi with Dalian Garment Import and Export Corporation and Mr. Xu Weizhong with Sunry International Trading Co. and China National Native Produce and Animal By-Products Import/Export Corporation visited the state. Chef Parola prepared a special luncheon for these visitors to demonstrate dishes appropriate for China. These visitors met with dealers, alligator farmers, and meat processors across the state. Byers traveled back to China to continue to encourage the development of a deal for nutria pelts and meat. However, an agreed price for these products could not be reached.

During November 1999 through February 2000 the department contracted with Chef Parola to conduct a retail nutria meat promotion with Winn Dixie stores and WWL Radio. This promotion involved a live radio show with Don Dubuc and Chef Parola discussing information about nutria meat, herbivory and wetland damage. During each three hour promotion, smoked sausage was available to taste and was available for purchase. Promotions were conducted across South Louisiana at: Chalmette, Lafayette (2), Walker, Belle Chase, Houma, Kenner, Prairieville, Metairie, Zachary, Arabi, Thibodaux, Slidell, Baton Rouge, Mandeville, and Gulfport. An average of 30-40 pounds of meat was sold at each promotion.

The department continued to distribute meat to interested dealers, restaurants, and chefs. The Baton Rouge Culinary Classic was held during May 2000 with eight chefs participating in the

nutria category.

The department began discussions with the National Geographic Explorer TV during the summer of 1999 and culminated with a weeklong filming session in March 2000. Interviews and filming related to marsh damage, nutria population dynamics, and meat and fur promotion. The program was aired on CNBC on October 29, 2000.

The department entered into a contract with LSU Food Science to conduct a detailed assessment of nutria meat. The first phase of the project involves determining characteristics of fresh and frozen meat and changes in quality with freezing. Storage of nutria will be essential with seasonal harvest. The second phase objective is to assess the yield of nutria meat mince from mechanical separation of carcasses, sides and quarters to develop three products from minced meat. It has been estimated that nutria meat will have five pounds of carcass weight with a dressing percentage (carcass yield) of approximately 50 percent. About 15 percent of the live weight or 30 percent of the carcass weight is boneless meat yield. As with most small meat species, the economic cost of hand-boning carcasses is a major contributor to high meat prices.

The department contracted with Chef Parola to participate in the National Restaurant Association, Hotel-Motel Show in Chicago, in May 2000. The purpose of this booth was to introduce nutria meat to the National Food Service Industry. There were 50,000 visitors at this show. Chef Parola met with several wild game meat distributors who expressed an interest in the meat. However, they are waiting for notification that the meat has FDA certification if USDA is not available.

Marsh Management

In October 1999 the USGS staff completed the summary of habitats and acreage for the ADWMA. This project was started in 1998 with fall aerial photos flown the third year after seismic. This photography of both deltas was scanned, rectified, and merged into two color photos. These were then labeled and black and white copies were printed for distribution to WMA users. The total acreage for the Main Delta was 15,166 and 11,671 for the Wax Lake Delta.

In January 2000 Division staff, at the invitation of Regional President David Work, began working

with BP Amoco on plans for a conservation easement on the White Lake Marsh. The intent of a conservation easement is to insure the future of this valuable waterfowl habitat.

Division staff continued to participate in the Lower Atchafalaya River Study with review of modeling to help decision-makers select the best water management plan for the entire region.

Division staff continued to work with staff at the National Wetlands Research Center on a CD of vegetative marsh type maps covering the periods of 1949, 1968, 1978, 1988, and 1997. These are being developed at the request of the CWPPRA Task Force.

After the detection of the marsh dieback in May 2000, during the aerial nutria vegetative damage survey, staff began meeting with various researchers to discuss monitoring and needed research.

Waterfowl Program

Fur and Refuge Division biologists completed the sixth year of a statewide mottled duck banding program during fiscal year 1999-00. Eight hundred seventy-eight mottled ducks were banded this year and 12,752 from 1994 to 1999. Study parameters include: survival rates, movements, and population size. Banding has occurred on public and private property throughout Louisiana's coastal zone. New "1-800 - number" bands issued by the Federal government are expected to greatly increase band reports from hunters. However, this change in band reporting rates may require several additional years of banding to obtain survival information.

Watchable Wildlife Program

Two fixed wing aircraft surveys (eight hours) and eight helicopter surveys (40 hours) were conducted during the 1999-2000 bald eagle nesting season. Two hundred thirteen young were produced from 151 active territories during the 1999-2000 nesting season. Statewide nesting activity peaked in January due to an unseasonably warm winter. Nests were difficult to survey in January due to remaining foliage on nest trees. Ten new nesting territories were identified, while ten nesting territories were permanently destroyed or vacated. A small percentage of nests are destroyed by severe weather every year. The bald eagle population has

remained static the last two survey seasons. The Department documented 182 territories in 1999-2000, and 181 territories in 1998-99. Production increased from 198 young in 1998-99 to 213 young in 1999-2000 which is a 7.6 percent increase. Eight hundred eighty-eight young have been produced during the last five nesting seasons.

Brown Pelican nesting activity began in April this year which is comparable to previous years. No winter nesting occurred on Queen Bess Island. Nesting declined on Last Island, Queen Bess Island, Wine Island, South Grand Gosier, Cerlew Island, and North Island during the 1999-2000 fiscal year. Last year there were a total of 12,265 nests at these six colonies compared to 3,400 nests this year. Although nesting declined at six major nesting colonies 10,000 brown pelican nests were counted on a Corps of Engineers spoil island at Baptiste Collette. This is the first year that Dept. personnel surveyed this spoil island. A slight decline (six percent) in productivity occurred this year compared to last year. Thirteen thousand seven hundred sixty-six (13,766) nesting pairs produced 22,650 young in fiscal year 1999-2000, while 15,990 nesting pairs produced 23,985 young in fiscal year 1998-99. Average number of fledglings per nest remained constant at 1.52 for fiscal year 1999-2000 and 1.50 for fiscal year 1998-99.

Brown Pelican nesting activity was interrupted in April and May, 2000. Strong southeast winds and high tides may have washed over nesting islands and destroyed nests. Renesting occurred during the later part of May and throughout June. Brown Pelicans dispersed across coastal Louisiana due to severe drought. Brown pelicans are sight feeders and water clarity improved across the coast due to elevated water salinities associated with the drought, which in turn provided optimum feeding habitat.

Louisiana's brown pelican population has stabilized over the past three years. Reproductive success remains high with 159,095 young produced from 1971 to 2000. Brown pelican nesting was documented on the Chandeleur Islands in 1918. Nesting ceased in Louisiana in 1962. Brown Pelicans were reintroduced to Louisiana from Florida in 1968 and began nesting in 1971. Unusual weather events including hurricanes, spring storms, and drought could retard future population expansion. It will be extremely impor-

tant to protect the new colony at Baptiste Collette to assure future reproductive success.

Amphibian and Reptile Program

The Louisiana Reptile and Amphibian Task Force met once in 2000 to discuss the feasibility of changing the Box Turtle Law to allow certain individuals to possess more than the legal limit. The intent by the Natural Heritage Program to list the Dusky Gopher Frog and Louisiana Pine Snake as protected species was presented. A proposal to license captive reptile breeders apart from wholesale/retail dealers was discussed.

During 2000 forty-eight wholesale/retail dealer licenses, 430 amphibian/reptile collector licenses, 10 under-sixteen collector licenses, and six out-of-state licenses were sold, for a total revenue of \$17,760. Revenue from the 1percent excise tax on out-of-state reptile and amphibian sales totaled \$11,694. Sales involved approximately 300 salamanders, 151,000 frogs, 3,900 turtles, 44,300 lizards, and 24,600 snakes.

Compensatory damage values were developed for litigations involving illegal take of amphibians and reptiles, and were based on current commerce prices. Public Talks were given at several venues regarding snakebite safety (for USGS personnel), general Louisiana snake natural history (for BREC), and one school in Baton Rouge. An article on salamander conservation was published in the Louisiana Conservationist, and papers were submitted to peer-reviewed journals on alligator snapping turtle population status, and historical trends in amphibian populations in southeastern Louisiana.

The Program administered several federal grants, including \$75,000 to survey for alligator snapping turtles, and \$75,000 to survey for map turtles and conduct nesting studies. These grants are continued to FY 2001. Jeff Boundy was a co-investigator on a \$39,000 grant to evaluate commerce and population demographics of map turtles.

Other research focused on determining the distribution and population status of amphibians and reptiles in Louisiana. Field work included 66 field days, mostly in the southeastern part of the State, with field data recorded for approximately 5,000 animals.

Estuarine Fisheries Program

Rockefeller Refuge continued its fisheries monitoring program in conjunction with various habitat management/restoration strategies. Though the primary goal of the Division is habitat management/restoration, personnel are able to strategically allow ingress and egress of organisms into the Superior Canal complex and several other management units when habitat integrity will not be compromised.

Since 1972, the Fur and Refuge Division has worked cooperatively with the Inland Fisheries Division's striped bass project. Striped bass fry are placed in the Rockefeller nursery until they are on feed. Once on feed, the fry are transferred to culture ponds. The fry are grown out to a length of 1.5 inches in culture ponds, harvested, and stocked into southwest Louisiana river systems. In 2000, the program released 160,376 bass. Of these, 137,692 were released into the Calcasieu River Basin, and 22,684 were released at Rockefeller Refuge. To date 3,061,982 fish have been stocked in the Calcasieu River system and 1,386,806 in the Mermentau River system.

Rockefeller Refuge staff completed the creel survey effort on Rockefeller. Data is currently being entered and analyzed. The survey was conducted in order to generate a better estimate of the amount of biomass being harvested from the refuge by sports fishermen.

Rockefeller Refuge continued sampling in connection with the long-term program to identify and document effects of structural marsh management on marine organisms. University of Southwestern Louisiana fishery personnel are continuing to analyze the trawl samples collected at Rockefeller by LDWF staff and entering data into computer files.

Rockefeller Refuge staff continued stocking Florida-strain largemouth bass to supplement populations lost during Tropical Storm Frances, as well as improve recreational fishing on the refuge. In March of 2000, staff released approximately 106,150 fry into freshwater impounded and semi-impounded areas on and near Rockefeller Refuge. About 49,500 fry were stocked into culture ponds for grow out to fingerling size. In May, 2000, the ponds were seined and nearly 21,000 fingerlings were released on the refuge.

PUBLICATIONS/COOPERATIVE RESEARCH/ TECHNICAL ASSISTANCE/ SCIENCE INFORMATION WORK

In addition to publication in science journals, Fur and Refuge Division biologists support research projects of scientists of other resource units, provide extension service to other landowners, and make information available to the public.

Publications

Scientific papers were written on the following topics. The papers were published as conference proceedings or abstracts and as articles in scientific journals.

- *Genetic structure of six populations of American alligators: a micro satellite analysis.*
- *Reproductive dynamics and mating patterns of wild American alligators revealed by genetic analysis.*
- *Evidence of accelerated sexual maturity and nesting in farm-released alligators in Louisiana.*
- *Louisiana's alligator ranching program: a review and analysis of releases of captive-raised juveniles.*
- *Sex ratios of American alligators (Crocodylidae): male or female biased?*
- *Physiology and endocrinology of stress in crocodilians. In: Crocodilian Biology and Evolution.*
- *Tooth development and dentin incremental lines in dentin of alligators.*
- *New record of endohelminths of the alligator snapping turtle (Macrochelys temminckii) from Arkansas and Louisiana.*

Cooperative Research

Several cooperative studies were undertaken or continued in 1999-2000 with university researchers to further the understanding of alligator physiology.

- DNA studies to evaluate social/breeding hierarchy in adult alligators, multiple male parentage, and geographic variation.
- Baseline studies on vitamin E in the alligator and its role in nutrition/disease of farm raised alligators.
- Studies on regulatory mechanisms of temperature dependent sex determination in alligators.
- Studies on nesting/hatchling sex ratios naturally incubated in the wild.
- Studies on the development of the brain, cardiovascular system, and auditory system in hatchling alligators.
- "Control" alligator eggs provided to Florida researchers evaluating environmental contaminants that have drastically reduced hatch rates in Florida.
- Studies on thyroid hormone levels (circadian and seasonal) in juvenile, sub-adult, and adult alligators.
- Studies on melatonin/photo period/thermal prefer-

ences in juvenile alligators.

Several cooperative studies were being conducted at Rockefeller Refuge concerning wetlands ecology during fiscal year 1998-99.

- Determining the relationships of invertebrate abundance and avian utilization to various management strategies employed at Rockefeller Refuge.
 - Determine spatial and temporal patterns of plant species invasion and expansion with a major focus on *Phragmites australis*.
 - Study on effects of nutrient levels on above/below ground biomass production. The study will compare semi-impounded and tidal areas.
 - Staff members at Rockefeller are currently assisting a graduate student from the Univ. of La. at Lafayette in conducting a research project to study the effects of nutrient levels on above and below ground biomass production. The study will compare semi-impounded and tidal areas.
 - Staff members are working on a joint project with LSU and NMFS to determine causes of "Brown Marsh" on Rockefeller Refuge.
 - The Univ. of La. at Lafayette is conducting a research project to provide a better understanding of the ecological succession of wetland ecosystems to be used in facilitating restoration and rehabilitation of coastal environments.
- Food habits of alligator snapping turtles are also being evaluated at Rockefeller Refuge. More than 100 were collected from trappers and lab work is completed. Reproductive tracts have also been dissected for correlation, and a manuscript will be prepared for publication pending data analysis. A program in "Access" was developed to assist in data analysis and writing a publication on the results will begin soon.]

Technical Assistance

Marsh management/marsh enhancement technical expertise was provided for private landowners in the coastal region. Rockefeller Refuge personnel worked closely with local, state, federal agencies, Ducks Unlimited, and private landowners to secure a 1 million dollar North American Wetlands Conservation Act grant for marsh terraces in southwest Louisiana. State monies used to fund the 3.1 million dollar Rockefeller Levee refurbishment project were used as a match for federal program monies. This innovative strategy that used funds already spent for a state conservation project will promote wetlands conservation throughout southwest Louisiana.

Rockefeller Refuge staff worked closely with local, state, federal agencies, and private landowners to gain approval for the engineering and design phase of the five to seven million dollar Highway 82 Fresh Water Introduction project which will move excessive flood water from the Mermentau Basin north of Rockefeller Refuge to the Gulf of Mexico. Existing refuge structures will be upgraded and new structures will be constructed on the Refuge to achieve this goal. Both refuge and private property will benefit from the project.

Staff assisted local landowner with renovation of an existing fish pond. Assistance consisted of recommendations for water level control and chemical control of unwanted aquatic plants and fish, as well as recommendations of stocking densities.

Louisiana continues to lose valuable fish and wildlife resources to development projects of federal, state and local governments and to projects of private enterprise. The Louisiana constitution charges the Department of Wildlife and Fisheries with responsibility "to protect, conserve and

replenish the natural resources of the state, the wildlife of the state,...." More specifically, federal, state and local laws and procedures allow the Department to conduct environmental investigations, i.e., the review of proposed projects and determination of possible effects on fish and wildlife resources.

Work during this fiscal year included cooperative efforts with the following proactive government and non-governmental natural resource units: Black Bear Conservation Committee, Groundwater Advisory Committee, Non-point Source Pollution Advisory Committee, Cameron/Creole Advisory Committee, Mitigation Area Review Team, Mitigation Bank Review Team, Geological Review Team, Hydrogeomorphic Modeling (HGM) Working Group, coastal restoration activities with the Governor's Office, environmental roundtables with the Vicksburg and New Orleans Army Corps of Engineers (ACOE) offices, Louisiana departments of Health and Hospitals and Department of Environmental Quality efforts related to pollution and fish contamination, and mitigation banking.

Habitat Section

The primary objective of the Habitat Section is to gather and compile data on wildlife and fisheries resources, determine the requirements for conserving the resources, and provide information and technical assistance to governmental entities, industry, and the public. Data are also gathered on the potential impacts of human activities on the resources, providing such technical information to planners and decision makers in advance of

The workload of the Habitat Section is divided into four units: Environmental Investigations, the Louisiana Natural Heritage Program, the Louisiana Natural and Scenic Rivers Program, and the Urban and Watchable Wildlife Program.

ENVIRONMENTAL INVESTIGATIONS

Investigations staff members reviewed approximately 3000 state and federal permit applications this fiscal year. Permits were for projects related to alteration of wetlands, freshwater diversion, hurricane protection, navigation, marsh management, mitigation banks/areas, airport construction, Community Development Block Grants, Farmers Home Administration grants, flood control, solid waste disposal, hazardous waste disposal, hydro-power and other types of dam projects, and coastal restoration.

There are numerous government agencies that the Department works with in conducting environmental investigations in cooperation and coordination

with U.S. Fish & Wildlife Service and the National Marine Fisheries Service. Most important is U.S. Army Corps of Engineers (ACOE).

ACOE is the principle agency promoting navigation and flood control projects in the state and is the permitting authority nationally for wetlands and adjacent waters. As a construction agency and a permitting agency, ACOE requires fish and wildlife resource data.

The Natural Resources Conservation Service and the U.S. Forest Service, of the United State Department of Agriculture (USDA), are required to consider the effects of their projects on fish and wildlife resources. These and other USDA agencies frequently require biological resource data during the project decision-making phase.

The Federal Highway Administration, Environmental Protection Agency, Federal Aviation Administration, Farmers Home Administration,

Housing and Urban Development, as well as Louisiana Department of Transportation and Development, Louisiana Department of Natural Resources, Louisiana Department of Environmental Quality, and Louisiana Department of Culture, Recreation and Tourism also require fish and wildlife information during project planning and decision making.

The Department also works with private developers and consultants involved in the permit application process with the above regulatory government bodies.

LOUISIANA NATURAL HERITAGE PROGRAM

LNHP staff reviewed for impacts on rare, threatened, and endangered (r/t/e) species and exemplary natural communities more than 2,000 proposed public and private projects. During the same period, we issued 40 scientific collecting, 30 wildlife rehabilitator, and nine special purpose permits. The LNHP continued to implement the management plan for Lake Ramsay Savannah Wildlife Management Area. During the year, habitat was control burned to benefit habitat for rare plants species and longleaf pine flatwood plant communities on the area. The site provided the location for numerous field trips by university classes.

During the year, LNHP staff spent more than 200 person field-days conducting surveys on r/t/e species and natural communities. These surveys, along with data from other researchers, provided information for 208 new Element Occurrence Records (EORs) (representing 43 taxa) and 2,033 updated EORs (representing 146 taxa) in the computerized database used by the program. During the same period of time, some 325 waterbird nesting colonies were updated in the database, of which 4 were newly located colonies.

The LNHP administered federal aid for endangered species through the Section 6 program in cooperation with the US Fish and Wildlife Service. Through this program, the state is reimbursed up to 75 percent of the cost of endangered species research and management. Research conducted during fiscal year 2000 included studies on Louisiana black bear, inflated heelsplitter mussel, and Louisiana pearlshell mussel. Research is conducted by staff biologists and contracted to university faculty.

Staff also participated in more than five Christmas Bird Counts, and administered more than 50 Breeding Bird Surveys throughout the state. These data are used throughout the United States to determine population trends on both breeding and wintering grounds. Staff also administered 40 statewide Louisiana Amphibian Monitoring Program routes, and conducted night surveys for many of them. Each is typically conducted three times per year. Unlike the bird surveys, these surveys are providing baseline information on the status of amphibians along the routes. The routes will be conducted by the LNHP staff and volunteers annually, and will be used to develop trend analyses for the species encountered. This was the fourth year such amphibian surveys were conducted.

The Wild Louisiana Stamp, Louisiana black bear license plate, and Teaming With Wildlife programs were administered by the Natural Heritage Program during this year. LNHP staff worked closely with the Reptile and Amphibian Task Force by providing information on the status of species of special concern in Louisiana, and provided recommendations to the Task Force on items involving take of certain species of reptiles and amphibians from the wild. LNHP represented the department on the Black Bear Conservation Committee Executive Committee. Also, staff represented the department on conservation issues throughout the state and the US. For example, we served as members of technical and core teams developed by The Nature Conservancy to develop conservation plans for ecoregions that partially were located within this state. These included the West Gulf Coast Plain Ecoregion, the Gulf Coast Prairies and Marshes Ecoregion, etc. Such plans will identify key target sites needed for the conservation of biodiversity in the ecoregion. Implementation will be spearheaded by The Nature Conservancy. Another means of providing input into conservation issues arises from our review of the proposed projects listed earlier in this section, and review of prescriptions and management plans on Kisatchie National Forest and our own series of Wildlife Management Areas. Staff reviewed dozens of proposed conservation/management plans during the year. We also identified and conducted field investigations of special areas on most of our upland wildlife management areas. These are to become natural areas.

During the year, the Natural Heritage Program staff was involved with translocations of the endangered Red-cockaded Woodpecker on National Forest lands in Louisiana, and on private lands in the Florida Parishes.

Public outreach by LNHP staff included at least two dozen presentations at educational facilities and scientific meetings. The staff also was involved with the development of some two dozen news releases from the department during the year, and several magazine and newspaper articles focused on conservation issues.

LOUISIANA NATURAL AND SCENIC RIVERS PROGRAM

The Scenic Rivers Program has had an outstanding year. The Scenic River Coordinator participated in or initiated nearly 80 enforcement actions. These included cases of illegal dumping, illegal sewage discharge, operating on a Scenic River without a permit, illegal timber harvest, and channel re-alignment. He also, through routine surveillance, post project inspections and response to complaints, caused compliance with permit conditions, utilization of adequate sediment protection, and the clean up of project sites. Examples of mitigative measures the staff has required through the Scenic River permit process include: allowing no clearing of right-of-way above directionally bored segments of pipeline crossings of Scenic Rivers; requiring that water used for irrigation or thermostatic testing of pipelines undergo adequate treatment before being allowed to return to our waterways; requiring that special mufflers be used on equipment operated on or near Scenic Rivers; greatly limiting, and at times prohibiting, the use and operation of heavy equipment within 100' of designated Scenic Rivers. The staff issued few, if any, permits for activities on Scenic Rivers without first making some mitigative changes to the original application and/or making some compensatory requirements of the applicant. The Scenic River staff was reduced to one individual during FY 99-00, yet the remaining biologist maintained regular contact with both state and federal Agencies to insure that designated Scenic Rivers are considered in all levels of planning and permitting. These Agencies include USCOE, USDA, NRCS, FEMA, USFWS, USFS, EPA, DEP, DEQ (LA and AR), DOTD, DHH, CRT, DOA, LAF, and Office of State Lands. He also worked closely

with city planners, police juries, mayors, and local interest groups and organizations throughout the state. Cooperation and corroboration has ranged from making written contributions to management plans to requiring permits for certain activities and enforcing permit conditions. The Scenic River staff made it abundantly clear that Louisiana's Natural and Scenic Rivers are indeed treasures of this state and that they are to be given every consideration as State protected priority areas in all aspects of planning and use.

FY 1999- 2000 was a productive year for the Scenic Rivers Program. We have been involved in a wider range of activities than ever before. From public outreach and education to the development of tools to assist fellow regulators in their efforts to help protect Louisiana's more than 1700 miles of designated Natural and Scenic Rivers, we have been quite busy.

In the area of public outreach, we continued to use a compiled list of local and statewide conservation organizations, and user groups/contacts associated with the various Scenic Rivers in order to facilitate the exchange of information, participation and cooperation between the Program and the interested public. We have also participated in general wetland education efforts by various public and private entities, schools, and local governing bodies. We have continued to work with our Enforcement Division to ensure that the laws, rules and regulations of the Scenic Rivers Act are adhered to. We have reported 15 suspected violations to the Enforcement Division and followed up by assisting them in their investigation when needed. Among those violations acted on in 99-2000 were illegal timber harvest, illegal dumping, operating on or adjacent to Scenic Rivers without a permit, and illegal gravel mining. A number of citations were issued for various other violations. We have also accompanied Agents in the investigation of numerous other complaints.

Finally, we have continued to make tough decisions in our permitting process. We have denied the issuance of four permits because the proposed activities were not compatible with the requirements of the Act and their potential and/or imminent impacts were not considered acceptable. Those permits that were issued, almost invariably were issued only after mitigative and/or protec-

tive measures were incorporated into their designs to insure that the ecological integrity and scenic values of the respective Scenic Rivers were preserved. A total of 43 permit applications were received and 37 were issued.

URBAN WILDLIFE UNIT

The Habitat Section, Urban Wildlife Program has been operating for six years. The program is staffed by one biologist and is supported by funds available within the Habitat Section, but has no funds specifically allocated to the program. The program biologist serves two functions within the Department; urban wildlife habitat education, and statewide coordinator of nuisance animal control. The program provides an extension service type role, educating homeowners and other landowners in urban, suburban and residential areas on wildlife issues. These issues include habitat conservation in developing areas, landscaping to attract wildlife, and other wildlife related topics. Various publications such as the book of nest box plans have been developed and are available to the public. Nuisance animal control includes overseeing the nuisance animal control permit system and the Nuisance Wildlife Control Operator (NWCO) program.

The program provides assistance to private and corporate landowners interested in enhancing wildlife habitat on their property. This is done by serving as a consultant who provides information on the habitat requirements of desired species and how to manipulate habitat to encourage those species. The biologist prepares and presents various slide presentations and gives talks to groups regarding urban wildlife topics. The groups include civic and rotary clubs as well as school classes and professional organizations local garden clubs.

The program utilizes the Waddill Outdoor Education Center in Baton Rouge for various urban wildlife projects and research including a backyard wildlife habitat demonstration site, developed to show homeowners how to landscape with native plants to attract wildlife. Other projects at the site include nest box research and a new bat house research

The Urban Program issues nuisance animal control permits and Nuisance Wildlife Control Operator permits. In FY 99-00, 140 nuisance animal control permits, and 25 Nuisance Wildlife Control Operator permits were issued.

OFFICE OF FISHERIES

The Office of Fisheries is comprised of two divisions, Marine Fisheries and Inland Fisheries.

MARINE FISHERIES DIVISION

The Marine Fisheries Division is charged with management of the full range of Louisiana's estuarine and marine resources. Division responsibilities are categorized as Fisheries Management Programs and Habitat Protection Programs. In addition, the Marine Fisheries Division manages four public oyster seed reservations, 3 public oyster seed grounds and one public oyster tonging area, administers the oyster lease survey program and the seismic program. Participation in numerous local, state, regional, national and international committees, task forces and councils provides professional expertise in the development of state and federal legislation and standards

FISHERIES MANAGEMENT PROGRAMS

Fisheries Management Programs include Shellfish Management, Mollusc Management and Finfish Management. In addition to headquarter operations, Division responsibilities are conducted through seven coastal study areas and the Lyle S. St. Amant Marine Laboratory.

Shellfish Management

The Marine Fisheries Division continued its long-

term fishery independent trawl sampling throughout coastal Louisiana. Data from these samples were used to recommend season frameworks for both the fall and spring inshore shrimp seasons and the winter territorial sea shrimp season. Additionally, these same data were used to recommend season extensions, special shrimp seasons, and provide recruitment indexes for gulf menhaden and blue crabs.

Month/Year	Number of 6', 16' Inshore and 16' Offshore Trawl Samples			Total Number
	6' Trawl	16' Inshore Trawl	16' Offshore Trawl	
July, 1999	74	112	20	206
August, 1999	64	152	20	236
September, 1999	44	120	20	184
October, 1999	34	107	24	165
November, 1999	0	64	37	101
December, 1999	0	66	48	114
January, 2000	0	54	34	88
February, 2000	11	66	39	116
March, 2000	79	105	42	226
April, 2000	280	125	28	433
May, 2000	247	131	19	397
June, 2000	192	128	20	340
Total	1,025	1,230	351	2,606

Shrimp

The spring inshore shrimp season in Shrimp Management Zone I was closed on July 19, 1999 at 6:00 A.M. due to significant numbers of small white shrimp present on the fishing grounds. Breton and Chandeleur Sounds remained open until March 31, 2000 at 6:00 A.M. due to technical data indicating the presence of harvestable quantities of large brown, white and pink shrimp.

The spring inshore shrimp season in Shrimp Management Zone II was closed on June 28, 1999 at 6:00 P.M. except for that portion of Zone II from the western shore of Bayou Lafourche east to the eastern shore of South Pass at the Mississippi River which closed July 6, 1999 at 6:00 A.M.

The spring inshore shrimp season in Shrimp Management Zone III was closed July 6, 1999 at 6:00 A.M. in order to protect significant numbers of small white shrimp present on the fishing grounds.

The fall inshore shrimp season in all three Shrimp Management Zones was opened on August 16, 1999 at sunrise. Zones II and III were closed December 20, 1999 at sunset and Zone I was closed December 31, 2000 at sunset except for that portion of Zone I comprising the open waters of Breton and Chandeleur Sounds as described in the menhaden rule which remained open until 6:00 A.M. March 31, 2000.

The spring inshore shrimp season in Shrimp Management Zone I was opened on May 22, 2000 at 6:00 A.M. except for the open waters of Breton and Chandeleur Sounds as described in the menhaden rule which opened May 15, 2000 at 6:00 A.M. The spring inshore shrimp season in that portion of Zone I which is south and west of the Mississippi River Gulf Outlet (MRGO), and south of the Intracoastal Waterway from its juncture with the MRGO to its juncture with the Industrial Canal was closed on July 17, 2000. The northern portion of Shrimp Management Zone I which lies north and east of the Mississippi River Gulf Outlet

(MRGO) and north of the Intracoastal Waterway from its juncture with the MRGO to its juncture with the Industrial Canal and including Lake Pontchartrain, Lake Borgne and the waters of Breton and Chandeleur Sound was closed July 25, 2000 at 6:00 A.M.

The spring inshore shrimp season in Shrimp Management Zones II and III was opened on May 8, 2000 at 6:00 A.M. An offshore territorial sea closure was enacted at 6:00 A.M. February 7, 2000 from the Houma Navigational Canal Channel as delineated by the buoy line to the eastern shore of Freshwater Bayou in order to protect significant numbers of small over-wintering white shrimp within this area. The offshore territorial waters extending from the Houma Navigational Canal Channel as delineated by the buoy line to the Atchafalaya River Ship Channel at Eugene Island were re-opened March 20, 2000 at 6:00 A.M. Remaining offshore territorial waters from the Atchafalaya River Ship Channel at Eugene Island to the eastern shore of Freshwater Bayou re-opened May 8, 2000 at 6:00 A.M. in conjunction with the opening of Shrimp Management Zones II and III. In order to protect significant numbers of small white shrimp present on the fishing grounds, the spring inshore shrimp season in Zones II and III was closed on June 24, 2000 at 6:00 A.M. except for that portion of Zone II extending from the western shore of Bayou Lafourche east to the eastern shore of South Pass at the Mississippi River which closed July 3, 2000 at 6:00 A.M.

Monthly Louisiana landings from 1990 through 2000 are depicted below. Landings from report period July, 1999 through June, 2000 totaled 77.2 million pounds and ranged from a high of 20.4 million pounds reported in May 2000 to 576 thousand pounds landed in March 2000. Brown shrimp production was greatest during May 2000 followed by June 2000 while white shrimp production peaked in October 1999. Overall, landings during this period exceeded by 2.3 million pounds those reported during the 1998-99 report period.

**Louisiana Commercial Shrimp Landings (all species, heads-off, thousands of pounds)
1990-2000**

Month	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Jan	452	2,265	1,424	1,915	1,916	1,955	1,468	3,055	1,085	3,641	1,732
Feb	207	1,239	600	974	864	780	501	1,169	515	897	861
Mar	298	623	529	446	491	526	285	525	445	655	576
Apr	852	1,159	481	340	606	823	524	594	760	1,486	2,723
May	23,664	11,598	6,745	2,910	9,250	13,643	7,768	7,575	14,228	17,262	20,385
Jun	13,371	11,440	12,174	14,660	8,667	11,210	15,515	11,072	13,799	11,331	13,103
Jul	4,831	5,330	5,733	7,424	4,123	4,272	4,481	5,369	5,055	5,862	5,031
Aug	6,415	4,988	6,241	4,905	5,033	7,253	4,632	5,561	8,278	6,220	10,688
Sep	6,584	5,888	6,559	5,473	7,148	6,854	4,162	4,583	4,940	5,879	11,494
Oct	9,794	7,928	9,451	7,636	9,146	6,505	5,019	8,476	8,594	8,741	11,741
Nov	5,306	6,554	8,187	5,364	6,536	5,638	5,542	7,467	7,231	7,572	8,549
Dec	3,829	2,423	4,174	3,758	3,708	3,123	3,968	3,723	5,494	3,547	-
Total	75,603	61,435	62,298	55,805	57,488	62,582	53,865	59,169	70,421	73,092	87,235

Crabs

The Crab Task Force continued to meet and addressed several issues, including limited entry, ghost traps, and crabber/shrimper user group conflicts and crab meat imports. The Crab Subcommittee of the Gulf States Marine Fisheries Commission continued revising the regional blue crab management plan. The Department and LSU Sea Grant cooperated and held a series of workshops across coastal Louisiana on the blue crab resource. Crab landings for 1999 are unavailable, however, landings trends indicate that production was greater than the previous year.

MOLLUSC MANAGEMENT

The Marine Fisheries Division manages four public seed oyster reservations, one east (Bay Gardene) and three west of the Mississippi River (Hackberry Bay, Sister Lake and Bay Junop) and two public seed grounds consisting of two areas (one east and one west of the Mississippi River). In addition to these, public tonging reefs in Calcasieu Lake and Sabine Lake have been established. Oyster seed reservations are usually opened in alternate years. The public seed grounds, however, are opened every year.

Statutory authority directs the Department to open the oyster season on Louisiana public seed grounds on the first Wednesday following Labor Day and close these areas by April 1 of each year. However the Louisiana Wildlife and Fisheries Commission is authorized to extend the season to May 15 of each year, provided sufficient stocks are available. The Secretary of the Louisiana Department of Wildlife and Fisheries may close seasons on an emergency basis if oyster mortalities occur or delay the season or close areas where significant spat catch has occurred with good probability of survival or if excessive amounts of shell in seed oyster loads occur. Management practices utilize rotational openings of the four Oyster Seed Reservation on alternating years.

In order to provide effective management, an annual monitoring program providing an up to date index on oyster populations along the coast is conducted. The program consists of three aspects: 1) hydrological, spatfall and resource monitoring, 2) oyster density and availability estimates, and 3) harvest estimates. Oyster dredge samples are collected to monitor oyster recruitment (i.e. spat set) and size distribu-

tion, fouling organisms and other sessile marine organisms as well as provide ancillary data on oyster mortality and predators. Oyster dredge sampling frequency varies by season with samples taken monthly during March and April and bimonthly during May and June and August through October. Hydrological measurements were taken in conjunction with all biological samples.

Oyster density estimates are made annually at selected stations in each of six different CSA's (I, II, III, V, VI, VII) with the random square meter method using SCUBA gear. The square meter frame is randomly placed onto an oyster reef at each station. Hydrological measurements were taken in conjunction with all biological samples. The information compiled from each station was recorded on field data sheets, entered into computer files, edited and verified.

Estimation of oyster availability is calculated from reef acreage estimates. Harvest estimates are determined from boarding surveys of boats fishing on the public oyster seed grounds and seed reservations as well as from inspection of Molluscan Shellfish Harvester-Dealer Time-Temperature Log Book records and trip-tickets. Boarding surveys record the location fished, time of day, number and type of gear used, the number of barrels of

seed oysters and sacks of market oysters harvested, and the size and LDWF motorboat registration number or United States Coast Guard (USCG) documentation number of the fishing vessel.

1999-2000 Oyster Season

The Louisiana Public Seed Grounds and the Bay Gardene and Hackberry Bay Oyster Seed Reservations opened one-half hour before sunrise September 8, 1999 and closed one-half hour after sunset April 1, 2000. The Sister Lake Oyster Seed Reservation was opened for a 10-day period beginning one-half hour before sunrise September 8, 1999 and closed one-half hour after sunset September 17. The Sister Lake Oyster Seed Reservation was re-opened one-half before sunrise October 1 and closed one-half hour after sunset May 15, 2000. The Bay Junop Oyster Seed Reservation remained closed for the 1999-2000 oyster season. Additionally, the designated sack-ing-only area east of the Mississippi River opened one-half hour before sunrise September 8, 1999 and closed one-half hour after sunset April 1, 2000. The Calcasieu and Sabine Lake tonging areas opened one-half hour before sunrise on October 16, 1999 and remained open until one-half hour after sunset April 30, 2000.

Changes in environmental conditions, both detrimental and beneficial, as well as seasonal and emer-

1999 -2000 Oyster Availability and Production Estimates On Public Seed Grounds and Seed Reservations				
Area	Seed Oyster Availability (Barrels)	Sack Oyster Availability (Barrels)	Seed Oyster Production (Barrels)	Sack Oyster Production (Barrels)
Coastal Study Area I	709,799	485,373	4,300	121,573
Coastal Study Area II	1,691,020	994,754	69,028	350,309
Hackberry Bay	2,396	420	8,230	8,690
Sister Lake	452,991	301,322	29,934	47,587
Bay Junop	63,010	28,764	-	-
Vermilion Bay	N/A	N/A	-	-
Calcasieu Lake	208,987	307,073	0	25,296
Total	3,127,843	2,117,706	111,492	553,455

agency public health closures, have influenced oyster production in Louisiana. For instance, high rainfall through the mid-1990's has influenced stock levels; although the resultant freshets caused oyster mortalities, subsequent high spat set and survival were reflected in an increase in seed oyster production in recent years. Because of fresher more favorable annual salinity regimes, brought about by a combination of rainfall, river discharges, and diverted fresh water, oyster production on the public seed grounds east of the Mississippi River has increased since 1992. Subsequent diversions of river water onto the public reef areas combined with habitat enhancement efforts following Hurricane Andrew have resulted in sustained high stock assessments since 1997. Recent high salinities resulting from local drought and low Mississippi and Atchafalaya River discharges may adversely impact future stock levels and production.

Oyster Leasing

During 2000, 23 leases were auctioned, containing 1,918 acres. Eight hundred seventy-two new and renewal applications were taken and 817 new leases were issued.

The Oyster Lease Survey Section created a web page to better serve the public. There have been over 18,000 hits on the web site. The section's oyster lease GIS database is available for viewing on the Internet at

<http://oysterweb.dnr.state.la.us/oyster>.

FINFISH MANAGEMENT PROGRAM

The primary objective of the finfish program is to develop and maintain a database of scientific information that can be used to make rational recommendations for the management of coastal finfish stocks.

Fishery Independent Monitoring

A comprehensive monitoring program was developed in 1985 to protect or enhance these valuable resources by providing information regarding the status of fish stocks that occur in the coastal waters of Louisiana at some time during their life cycle. Three gear types are used coastwide to sample various year classes of estuarine dependent fish.

A bag seine is used to sample young of the year and provide information on growth and movement. The seine is 50' in length, 6' in depth and

has a 6' x 6' bag as an integral part of and midway the length of the net. A gill net is used to sample juvenile, sub-adult and adult fish and provide information on relative abundance, year class strength, movement and gonadal condition. The gill net is 750' in length, 8' in depth and constructed of monofilament. The net is composed of 5 panels (150'x8') each, of the following stretched mesh sizes: 2", 2.5", 3", 3.5" & 4". A trammel net is used to provide information on relative abundance, standing crop and movement. The trammel net is 750 feet in length, 6 feet in depth and constructed of nylon.

Gill net samples are taken semi-monthly from April through September, and monthly from October through March; trammel net samples are taken monthly from October through March, and seine samples are taken monthly from January through August, and semi-monthly from September through December. Hydrological readings (conductivity, salinity, and water temperature) are taken each time a biological sample is taken. Also, wind direction and speed are taken each time a biological sample is taken. Samples are taken at specific locations arranged in such a manner so as to cover the beach, mid-marsh and upper marsh areas of all major bay systems throughout coastal Louisiana. The catch and hydrological information is summarized for each coastal area on a monthly basis to give the resource managers information as to the current condition of the resource. The pertinent life history information for the important species is also used in developing analytical and predictive models.

Fishery Dependent Monitoring

Commercial landings continue to be collected by Marine Fisheries Division personnel. A new system for collection entitled "Trip Ticket Program" began January 1, 1999. This program requires wholesale/retail dealers report purchases from commercial fisherman for each trip. The information obtained will enhance the accuracy of stock assessments conducted by state and federal fishery management agencies.

Marine Fisheries Division personnel continue to collect trip interview information from commercial fishermen which provides biological information on species of fish and shellfish caught in Louisiana waters. The federally funded program focused on species of greatest state and federal interest.

The Marine Recreational Fishery Statistics Survey is being conducted by Marine Fisheries Division personnel. The program collects catch statistics and biological samples from the recreational catch.

Finfish Stock Assessments

Division personnel updated stock assessments for black drum, mullet, southern flounder and sheepshead in 2000.

Louisiana Artificial Reef Program (LARP)

Eight obsolete oil platforms were installed as artificial reefs during fiscal year 1999-00. LARP was established in 1986 to use select, obsolete oil and gas platforms to provide habitat for a multitude of Louisiana's coastal fishes. Federal law and international treaty require oil exploration companies to remove these platforms one year after production ceases. LARP has provided an opportunity for oil companies to contribute to maintenance of fisheries habitat.

Since its inception, a total of thirty-one petroleum companies have participated in the program and donated the jackets of 98 structures which were installed at select locations as artificial reefs. The reef program also developed reefs at inshore locations, primarily low profile reefs composed of shell.

Lyle S. St. Amant Marine Laboratory

The Marine Laboratory's primary mission is to conduct the research required to manage Louisiana's marine fisheries. Laboratory facilities are also made available for the use of other Department and non-department entities engaged in fisheries management and enforcement, coastal restoration, and marine education. The Laboratory is the headquarters of Coastal Study Area III which is charged with the monitoring of finfishes and shellfishes in the Barataria Bay estuarine system. The Enforcement Division routinely uses the laboratory as a base of operations, and part of the marine training of Enforcement cadets is conducted at the laboratory each spring. Several LSU, UL Lafayette, and Nicholls State University researchers make use of laboratory facilities. The Department's Education Section of Fur and Refuge conducts a teacher workshop (Wetshop) at the laboratory each summer, and in conjunction with LSU Sea Grant and Agricultural Extension also conducts, at the laboratory, the award-winning Marsh Maneuvers for 4 H students, each

summer. This fiscal year the laboratory also hosted a session of the education section's Becoming an Outdoors Woman (Marine Fishing) and a session of Southeastern Louisiana University's Project CYPRESS, an environmental educational program for teachers. The marine laboratory also supports the monitoring of the Grand Isle Sulphur Mine Reef for the Louisiana Artificial Reef Program.

The major research project on marine finfishes conducted at the laboratory during the 1999-00 fiscal year was the generation of age, growth, and fecundity data needed for age-structured stock assessments of black drum, gray snapper, red drum, sheepshead, southern flounder, spotted seatrout, and striped mullet. Federal funding for this project was through USFWS Sport Fish Restoration.

Age and Growth Laboratory

To increase accuracy of stock assessments, the Division has instituted an extensive, long-term project for obtaining age, growth, and fecundity data on important marine finfishes.

Work progressed during the fiscal year on black drum, sheepshead, southern flounder, spotted seatrout, red drum, and striped mullet; gray snapper were added to those species sampled for age and growth analysis by the marine laboratory. Personnel obtained fish measurements and otoliths (ear stones) by fishery independent sampling and by sampling the commercial and recreational fisheries. Otoliths were removed from the fishes, sectioned, and examined for annular rings (indicators of age). The latest computer image-analysis technology is used in otolith interpretation.

Cooperation continued with Louisiana State University's Coastal Fisheries Institute (LSUCFI). The Institute continued to provide consultation, and verification of the accuracy of the Laboratory's aging techniques. Institute researchers also investigated new techniques in otolith science and taught those techniques to Laboratory personnel.

During the 1999-00 fiscal year the age analysis of 431 black drum, 1000 red drum, 285 sheepshead, 263 southern flounder, 1000 spotted seatrout, and 456 striped mullet was completed. Ovaries of 10 sheepshead and 11 black drum were collected

from fishery independent sampling and ovaries of 46 gray snapper from fishery dependent sampling were collected; all were sent to LSUCFI for analysis. Efforts to collect large numbers of gonads of sheepshead from the commercial fishery continue.

HABITAT PROTECTION PROGRAMS

Habitat Protection Programs include: Environmental Monitoring of the Louisiana Offshore Oil Port (LOOP), the Southeast Area Monitoring and Assessment Program (SEAMAP), Hydrologic Monitoring, Monitoring for Environmental Perturbations, Oil Spill Response, Caernarvon Freshwater Diversion Monitoring, Seismic, and Coastal Wetlands Protection.

LOOP Monitoring

Environmental monitoring began in 1978 to measure the environmental impacts of LOOP INC.'s operations to the coastal, estuarine, and marine habitats and biological communities near their facilities. The monitoring program was designed to address specific objectives: gather seasonal data to relate environmental conditions during LOOP operation to a historical baseline; detect adverse environmental impacts to take corrective action as soon as possible; have sufficient data to determine causes of environmental damage and place responsibility; and evaluate long- and short-term impacts of the project.

An internal and external evaluation of the Environmental Monitoring Program was conducted during 1995-96, and the sampling program was suspended by the Environmental Directors in June 1996 pending the outcome of a data evaluation that was completed in May 1998. The Environmental Directors have directed the Louisiana Offshore Terminal Authority to compare the LOOP monitoring program with that of the Louisiana Oil Spill Coordinator in coastal Louisiana, and provide for a re-design and update of the program to ensure its compliance with mandated objectives. That effort continues. Southeast Area Monitoring and Assessment Program

SEAMAP is an ongoing cooperative program for facilitating the coordinating collection, management and distribution of fishery-independent biological and environmental data by state and federal agencies. The National Marine Fisheries Service provides funds to the states through the Gulf

States Marine Fisheries Commission to collect long-term, standardized data on living marine resources and their environment. Fishery-independent data are those collected apart from a directed recreational or commercial fishery, and are important for understanding how fishery stocks respond to fishing and management of fisheries. Data are collected on fishery stocks that are managed cooperatively by state and federal agencies. The current study area includes marine waters of Louisiana and the U.S. Exclusive Economic Zone. Louisiana SEAMAP activities include summer, autumn, and winter trawl surveys that also collect zooplankton and environmental resource data. Department personnel also participate in developing Gulf-wide priorities and methods for data collection. More information about SEAMAP is available at the following website: <http://www.gsmfc.org/>.

Hydrologic Monitoring

The Department began collecting constant records of salinity, water temperature, and tide level in 1958. Data are collected from 15 stations located from the Pearl River to Calcasieu Pass. Once processed, the data are used to support fishery management, for example, determining how much area of suitable brown shrimp nursery grounds are available each year and setting season opening dates. During 1999-2000 this program was conducted cooperatively between the Department of Wildlife and Fisheries and the U.S. Geological Survey. Field data are collected by USGS, and finished data are provided to the Department. All sites collect data in near real-time (four hour lag), and the data are transmitted via satellite from the instrument in the field to the USGS office in Baton Rouge and downloaded to the Department's database via the Internet. Both internal and external data requests are filled from this database. The data can be viewed by visiting the Department's website: <http://www.wlf.state.la.us/apps/netgear/index.asp?cn=lawlf&pid=884>.

Monitoring the Effects of Environmental Perturbations

This project, funded under a grant from the National Oceanic and Atmospheric Administration, has the objective of establishing a fisheries dependent monitoring program capable of determining the impacts of adverse environmental/climatological conditions on the fishing patterns and subsequent income of commercial

fishers and charter boats. Events such as hurricanes, red tides, floods, oil spills, and the occurrence of oxygen-depleted bottom waters affect the harvest of Louisiana's marine fishery resources and therefore, because of the importance of this industry, the economy of the state. Individual harvesters may be forced to spend additional time and effort in locating targeted species, prevented from working traditional fishing grounds, or prevented from fishing at all. An objective determination of the effects of such events on commercial fishing will allow integration of these events into the existing management regime for those fisheries, and form the basis for rational declarations of emergency. Key components of the project include trip tickets, logbooks, and environmental monitoring. Wholesale/retail dealers use a trip ticket form to document purchases from commercial harvesters. Commercial harvesters and charter boats use logbooks, which identify vessel movement, fishing location and catch. The environmental monitoring segment documents major climatological/environmental perturbations that affect the coast, particularly the offshore hypoxic zone in the vicinity of Jefferson, Lafourche and Terrebonne Parishes. These data are analyzed to determine if changes in effort and fishing location can be documented in relation to known perturbations. Maps of the most recent hypoxia surveys can be found at the Department's website at <http://www.wlf.state.la.us/apps/netgear/index.asp?cn=lawlf&pid=900>.

Oil Spill Response

The Department's Oil Spill Task Force continued in 1999-2000 to develop and implement plans to protect and restore the State's wildlife, fishery, and habitat resources from the adverse effects of oil spills.

Department personnel responded to a Chevron pipeline rupture near Grand Terre in November 1999. Marsh and beach habitat were oiled during the incident, and state and federal agencies are working to measure the environmental impacts of the spill so that the natural resources that were injured can be restored. The Department continued restoration planning for other spills, including:

- A May 1997 Texaco pipeline rupture into Lake

Barre in Terrebonne Parish, Louisiana.

- A rupture in an Apache Corp. pipeline in June 1997 that was burned in July 1997. Indications were that the line had been leaking for some time, perhaps discharging as much as 2000 barrels of oil into the marsh near Freshwater Bayou.

- A September 1998 Equinox Oil Company well blowout in Lake Grand Ecaille near Port Sulphur.

The Department also participated in an interagency project initiated by the Louisiana Oil Spill Coordinator's Office to develop regional plans to restore natural resources injured in oil spills.

Seismic Monitoring

The Seismic program was created in 1939 specifically to protect oysters, fish, shrimp, and other wildlife from injury due to seismic exploration. In FY 1999-00, oil and gas exploration activity continued to lag. The section continued to monitor seismic activity throughout the state. The addition of pre-project meetings as required by the rule promulgated in February 1999 provided an opportunity for community outreach and involvement.

Coastal Wetlands

In 1999-2000, the Marine Fisheries Division continued to work with the state Wetlands Conservation and Restoration Task Force and the federal Coastal Wetlands Planning, Protection and Restoration Act Task Force in developing projects and strategies for slowing the rate of coastal wetlands loss in Louisiana.

Extensive fisheries resource monitoring programs continued for both the Caernarvon and Davis Pond Freshwater Diversion Projects. The Davis Pond Project, due to go on line on spring 2001, includes a comprehensive study of project effects on recreational fishing throughout the Barataria Basin.

Marine Fisheries Division personnel continued work on the lease relocation procedure for oyster lease holders that may be adversely impacted by coastal restoration projects.

INLAND FISHERIES DIVISION

The Inland Fisheries Division manages fish populations and habitats for the conservation and improvement of sport and commercial fishing primarily in freshwater areas of the state. Division responsibilities are divided into two major categories: Fisheries Management and Aquatic Habitat Management.

FISHERIES MANAGEMENT

Lake Management

Fisheries managers estimate relative abundance, size, class structure, and species composition of fish population and physiochemical characteristics of the water in approximately 60 lakes and streams annually. All lakes are sampled in a similar manner so that data can be compared. Sampling techniques include:

Electrofishing samples are taken in the spring and fall to provide a measure of abundance. Only largemouth bass are collected in the spring while largemouth bass and crappie are collected in the fall. A forage sample of all species is also collected in the fall. Standard sampling time is 900 seconds per station.

Gill net samples are taken during winter primarily to determine relative abundance and length frequencies of gizzard shad, striped bass, hybrid striped bass, commercial and rough fish species. Monofilament nets with meshes from 2.5 to 4.0 inches (bar mesh) are set at dusk and gathered at sunrise. Each fish taken is identified, weighed and measured. This sampling method provides gear selectivity, species composition, and length frequency information.

Shoreline seine sampling measures reproductive success of the sunfishes including bass and bluegill. Year-class strength, species composition and prey availability are provided by this sampling effort. Samples are conducted during spring and summer and consist of one quadrant haul at each sample site using a 25-foot by six foot seine.

Frame nets are used to measure relative abundance and length-frequencies of crappie and other sunfish. Species composition, age and growth and length weight relationships are determined. Sampling is conducted for a minimum of 48 hours with two nets at each station.

Water quality samples are taken at all sampling stations. Water temperature, pH, dissolved oxy-

gen concentration, conductivity, oxidation/reduction potential and water body depth are measured.

Creel samples were conducted on five water bodies. This sampling method puts the fisheries manager in direct contact with the fishermen. Information collected includes species sought and species caught, distance traveled, time fished, number caught and released, and a measurement of all fish harvested.

The Inland Fisheries Division also monitors other fish species including paddlefish, and sturgeon. The Division continues to collect data on relative abundance, habitat requirements, movements and population estimates.

Paddlefish were again artificially propagated and stocked in Louisiana waters. All paddlefish stocked were implanted with coded wire tags before release. Tagging, age and growth and population characteristics of pallid and shovelnose sturgeon will continue to be collected in 2001. Beginning in 2000 a project in cooperation with the U.S. Fish and Wildlife Service was begun to implant sonic tracking transmitters in Gulf sturgeon and follow their movements in the Lake Pontchartrain basin.

Technical Advice to Owners of Ponds and Small Lakes is also part of the responsibility of the division. During the past year, division biologist made over 600 site visits assisting residents of the state on problems ranging from construction and stocking requirements to harvest and disease identification. The biologist also answered over 2,400 phone inquiries about various pond related problems.

Public Boating Access Maintenance is a responsibility that includes inspection and minor repairs on public boat ramps through the state. Last year the division performed monthly inspection on over 50 ramps. The division also did minor repairs on four freshwater and one salt water ramps in partnership with local sponsoring enti-

ties.

Louisiana Cooperative Fish Disease is a project that the division has entered into with the L.S.U. Aquatic Animal Diagnostic Lab , which provides support to private pond owners. Last year 40 cases were submitted as part of this project.

The Division is also responsible for conducting investigations into fish kills in freshwater. Area impacted and losses are recorded at each kill. Thirty Eight kills were worked this year. Three lakes experienced kills where the Largemouth Bass Virus was identified. Further investigations into the LMBV is being conducted. Additionally, the Division responded to several hazardous materials spills.

Fish Stocking the goals and objectives of Inland Fisheries Division include providing the public with a quality fishing experience and managing for big bass. In part the management for big bass is reliant upon the stocking or incorporating of the Florida largemouth bass gene into our native black bass environment. Departmental Inland Fish Hatcheries provided fish stocking as a part of a fisheries management program for 65 diversified water bodies that encompassed over 850,000 acres throughout the state of Louisiana.

The following is an alphabetical listing of the water bodies and the fish species that were stocked in fiscal year 1999-2000:

<u>Waterbody</u>	<u>Species</u>	<u>Number</u>
Amite River	FLMB - Fingerling	13,965
Anacoco Lake	BG - Fingerling	120,687
	CCF - Fingerling	26,316
	FHCF - Fry	8,379
	FLMB - Fingerling	266,398
Atchafalaya Basin	FLMB - Fingerling	362,061
	PDDL - Fingerling	4,684
Atchafalaya River	PDDL - Fingerling	1,852
Black Bayou (Bossier)	FLMB - Fingerlings	41,581
Blind River	FLMB - Fingerlings	14,244
Buhlow Lake	BCF - Adults	122
Caddo Lake	FLMB - Fingerlings	221,448
Caenarvon Lake	FLMB - Fry	119,900
	FLMB - Fingerlings	120,208
Calcasieu River	STB - Fingerlings	137,692
Cane River	HSTB - Fry	1,000,000
Caney Lake	FLMB - Fingerling	251,504
Chatham Lake	CCF - Fingerlings	9,982
Chicot Lake	BG - Fingerlings	2,120
	BCF - Fingerlings	6,365
	CCF - Fingerlings	6,303
	FLMB - Fingerlings	87,891
City Park Lake (New Orleans)	FLMB - Adult	1,289
Claiborne Lake	BCF - Fingerlings	8,018
	CCF - Fingerlings	11,000
	FLMB - Fingerlings	68,160
	HSTB - Fingerlings	64,575
Concordia Lake	FLMB - Fingerlings	96,380
Cotile Lake	CCF - Fingerlings	5,112
	FLMB - Fingerlings	30,607
Cross Lake	FLMB - Fingerlings	130,872
	HSTB - Fingerlings	105,238
Cypress Lake	FLMB - Fingerlings	47,250
DARbonne Lake	FLMB - Fry	3,300
	FLMB - Fingerlings	155,178

Des Allemands	FLMB - Fingerlings	152,150
False River	FLMB - Fingerlings	40,440
	STB - Fingerlings	30,160
Fausse Point	FLMB - Fingerlings	130,872
Grassy Lake	FLMB - Fingerlings	20,086
Henderson Lake	FLMB - Fingerlings	55,182
	HSTB - Fingerlings	74,583
International Paper	HSTB - Fingerlings	27,714
John K. Kelly	CCF - Fingerlings	65,981
	FLMB - Fingerlings	249,887
Kepler Lake	CCF - Fingerlings	8,058
Kincaid Lake	CCF - Fingerlings	9,361
	FLMB - Fingerlings	25,051
Kiroli Park	CCF - Fingerlings	1,150
Kisatchie Natl. Forest Water Bodies	FLMB - Fingerlings	32,805
	CCF - Fingerlings	14,129
Lacassine Natl. Wildlife Refuge	FLMB - Fingerlings	50,000
Lafourche Lake	FHCF - Fry	6,867
Lake Bistineau	FLMB - Fingerlings	459,269
Lake Bruin	HSTB - Fingerlings	37,130
Lake Louis	FLMB - Fingerlings	11,970
Lake Martin	FLMB - Fingerlings	14,607
Lake Providence	FLMB - Fingerlings	15,960
Lake St. John	HSTB - Fingerlings	19,740
Lake St. Joseph	BG - Fingerlings	85,500
Lake Verret	FLMB - Fingerlings	149,275
Mermentau River	PDDL - Fry	307,490
Mill Creek Lake	CCF - Fingerlings	7,936
Millers Lake	FLMB - Fingerlings	32,670
Ouachita River	HSTB - Fingerlings	9,500
	STB - Fingerlings	140,976
Pearl River	STB - Fingerlings	22,040
Red River	PDDL - Fingerlings	2,029
Rockefeller Refuge	FLMB - Fry	106,150
	FLMB - Fingerlings	22,977
	STB - Fingerlings	22,684
Rodemacher Lake	FLMB - Fingerlings	154,220
Ruston City Park	CCF - Fingerlings	713
Sabine River	PDDL - Fingerlings	18,342
Saline Lake	CCF - Fingerlings	31,233
	FLMB - Fingerlings	86,460
Spanish Lake	FLMB - Fingerlings	129,716
Spring Bayou	BCF - Fingerlings	8,128
	CCF - Fingerlings	13,096
	BG - Fingerlings	9,225
	FLMB - Fingerlings	30,757
Sabine River Authority Pond	FLMB - Fry	50,050
Tangipahoa River	FLMB - Fingerlings	14,244
	STB - Fingerlings	30,576
Tchefuncte River	STB - Fingerlings	5,670
Tensas Natl. Wildlife Refuge	FLMB - Fingerlings	3,000
The Pen	FLMB - Fingerlings	102,624
Tickfaw River	FLMB - Fingerlings	14,244

Toledo Bend	FLMB – Fingerlings	1,100,321
	PDDL – Fingerlings	695
	STB – Fingerlings	498,520
Turkey Creek Lake	BCF – Fingerlings	15,300
	CCF – Fingerlings	5,625
University Lake (B.R.)	BCF – Fingerlings	5,000
	FHCF – Fry	315
	FLMB – Fingerlings	1,676
Vernon Lake	FLMB – Fingerlings	99,069
Wallace Lake	FLMB – Fingerlings	81,212
<u>TOTAL FISH STOCKED</u>		<u>8,523,091</u>

ABBREVIATIONS AND SUMMARY-FY 99-00

Florida Largemouth Bass (FLMB)

(279,400 fry; 5,188,491 fingerlings; 1,289 adults) 5,469,180

Striped Bass (STB): (fingerlings) 888,318

Hybrid Striped Bass (HSTB):

(1,000,000 fry; 1,338,480 fingerlings) 1,338,480

Channel Catfish (CCF): (fingerlings) 215,955

Blue Catfish (BCF): (42,811 fingerlings and 122 adults) 42,933

Flathead Catfish (FHCF): (fry) 15,561

Paddlefish (PDDL): (307,490 fry and 27,602 fingerlings) 335,092

Bluegill (BG): (fingerlings) 217,532

Total: **8,523,091**

AQUATIC HABITAT MANAGEMENT

Aquatic Plant Control Program

During fiscal year 1999/00, the aquatic plant control program provided substantial benefits to millions of Louisianians. Responsibilities included monitoring water bodies for non-native, invasive aquatic vegetation, providing technical assistance, and continuous investigation into more effective and environmentally safe methods of controlling these nuisance plants. Aggressive treatment of affected waters continued this fiscal year in an effort to restore and improve the aquatic habitat and the natural desirable balance of plants and fish by controlling the nuisance plants and to provide easy access for the boater.

Thirty-five lakes were type-mapped to determine and evaluate the status of aquatic weed infestations, primarily submersed, in these lakes. Species composition and density were determined on six lakes.

Biologists continued to provide advice and technical assistance to private and municipal pond owners on aquatic vegetation management problems. This popular extension program also provides aquatic plant identification assistance for the public on request.

Ongoing research projects of the Aquatic Plant Control Program include evaluation of new herbicides to determine their availability and effectiveness for use in aquatic weed control and investigations into the affects of environmental conditions and water fluctuations on hydrilla, as well as evaluations of chemical, biological and mechanical methods of its control.

Water Hyacinth Control

Crews utilizing boats, airboats, mudboats and roadside spray units effectively applied herbicide to 25,655 acres of Louisiana's freshwater wetlands infested with water hyacinths. Another 6,200 acres were treated by helicopter for a total of 31,855 acres. During the year, limited applications of specialized herbicides were used to relieve unusual and severe infestations of aquatic weeds in selected public waterbodies. These applications were for boating access improvement and habitat enhancement measures and served to familiarize local residents with safe and effective use of aquatic herbicides.

Hydrilla Control

Hydrilla (*Hydrilla verticillata*), an invasive exotic submersed aquatic plant that was discovered in Louisiana in 1973, continues to spread into many areas of the state and has the potential of becoming a more serious and expensive pest to control than the water hyacinth.

Caney Creek Reservoir and Lake Rodemacher were part of a federally funded project to determine the effects of vegetation removal by triploid grass carp. This project, initiated in 1993/94, has been completed and a final report has been submitted.

Biologists have previously investigated and verified reports of hydrilla infestations in numerous other waterbodies statewide. In cooperation with personnel of the U.S. Army Corps of Engineers, observations were made on the density, environmental impact and rate of spread of these introductions in Louisiana waters.

Salvinia

Another more recent invasive exotic plant introduction into Louisiana waters is salvinia. There now are two species of this aquatic plant in the state. Common salvinia (*Salvinia minima*) has been in the state since 1980 and is rapidly spreading throughout the state. Giant salvinia (*S. molesta*) was discovered in Toledo Bend Reservoir in the summer of 1998. It is thought to have been introduced by the water garden trade. Five-hundred six (506) acres of giant salvinia were effectively treated in Toledo Bend Reservoir. Giant salvinia has been discovered in private waters as well. A severe infestation in a pond in Houma was treated with herbicide. A lighter infestation in a small pond in the Duson area was stocked with grass carp to determine if these fish can control this plant in ponds. It was determined that triploid grass carp were not effective in controlling giant salvinia and herbicide applications were used to eradicate plants at this site. An attempt is being made to rear salvinia weevils in greenhouses to evaluate their potential as a biocontrol agent for common salvinia.

Public Access and Boating Facilities.

The objective of this project is to develop and maintain boating and fishing facilities that provide

access to Louisiana waters. The program is largely funded by the federal Sport Fish Restoration Fund, made available through the Wallop/Breaux Amendment of 1986. By law, a minimum of 12.5 percent of the Sport Fish Restoration Fund allotted to Louisiana each year must be spent on boating access to fresh and salt waters. Local municipalities provide match for projects in their areas. Consequently, very few dollars must be drawn from the Department's operating fund. Facilities include boat ramps, fishing piers, and water control structures which manage the hydrology of aquatic habitat. Since 1986, the Inland Fisheries Division has enrolled 73 projects under the program. A total of 65 structures have been completed. One structure was under construction this fiscal year, and planning was continued on two others. An additional 60 boat ramps are routinely inspected and maintained.

Public Access Facilities for Boating and Fishing in Planning Stage 1999-2000:

Madisonville Boat Harbor
Main Street Boat Launch
Franklin Boat Launch
Grand Chenier Boat Launch
Berwick Boat Launch, Phase II
North Bend Boat Launch
South Shore Harbor Improvements

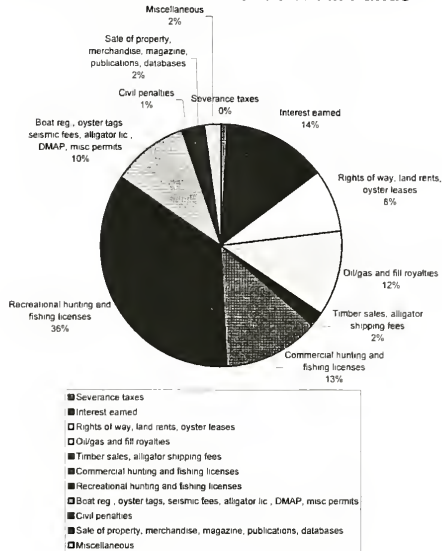
Public Access Facilities for Boating and Fishing Completed Prior to 1999-2000:

Spanish Lake Renovation
City Park Lakes Renovation
Toledo Bend Fishing Pier
Grand Isle Fishing Pier
Reserve Boat Launch
Morgan City Fishing Wharf
Attakapas Boat Launch
Bayou Vermilion Launch
Lake Dautrieve Launch
Mandeville Harbor Launch
Cotile Lake Launch
Belle River Landing Launch
Bayou Benoit Boat Launch
Krotz Springs Launch

Cross Lake Launch
Bayou Bonne Idee Launch
Clovelly Canal Boat Launch
Caddo Lake Piers
Iatt Lake Boat Landing
Buhlow Lake Landing
Cotile Lake Channel Buoys
Lake Palourde Marina
Bonnet Carre Spillway Launch
Schooner Bayou Canal Boat Launch
Grand Bayou Reservoir Boat Launch
Sutton Lake Launch
Toledo Bend Boat Lanes, Phase I
Freshwater Bayou Canal Boat Launch
Bayou Pigion Boat Launch
Upper Grand River Dock
Bayou Sorrel Dock
Toledo Bend Phase II Channel Clearing
Toledo Bend Boat Lanes, Phase III
Madisonville Boat Launch
Lake Boeuf Boat Launch
False River Boat Launch
Indian Creek Channel Marking
Bayou DeSiard Boat Launch
Quintana Landing Renovation — Phase II
Golden Meadow Boat Launch
Bayou Teche Fishing Pier
Jack Miller's Landing Launch
Vernon Lake Channel Clearing and Marking
Lockport Boat Launch
Lac Des Allemands Boat Launch
Leighton Boat Launch
Riverside Drive Boat Launch
Frenier Boat Launch
Bayou Bonfouca Boat Launch
Berwick Boat Launch
City of Crowley Boat Launch
Sabine River N. Boat Launch
North Park Boat Launch
Kincaid Reservoir channel Marking
Chicot Lake Fishing Pier
Mandeville Harbor, Phase II
Reserve Boat Launch
Golden Meadow Boat Launch
Grand Isle Fishing Pier
Morgan City Fishing Wharf
Toledo Bend Fishing Pier

APPENDIX

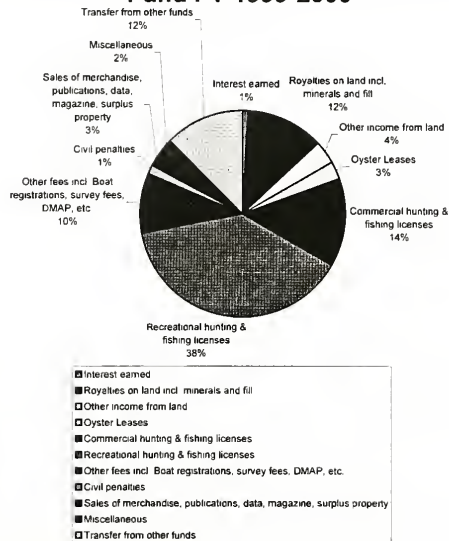
FY 1999-2000 Total Revenue to All Funds **



** excludes Lifetime License Fund, accruals, fund transfers

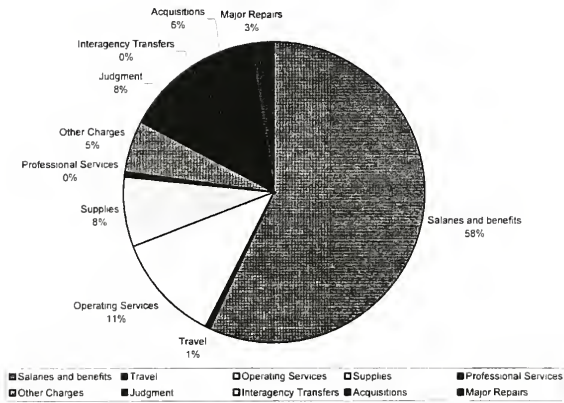
Total Revenue \$37,998,152

Sources of Revenue to the Conservation Fund FY 1999-2000



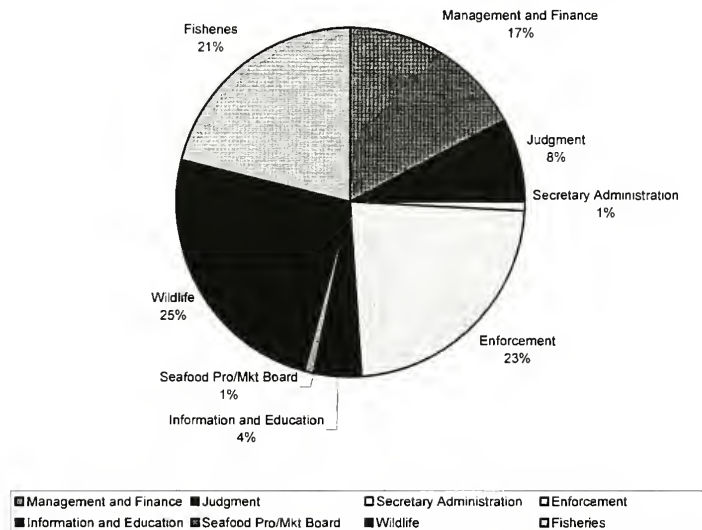
Total from all sources \$30,756,203

FY 1999-2000 Expenditures by Category (type)



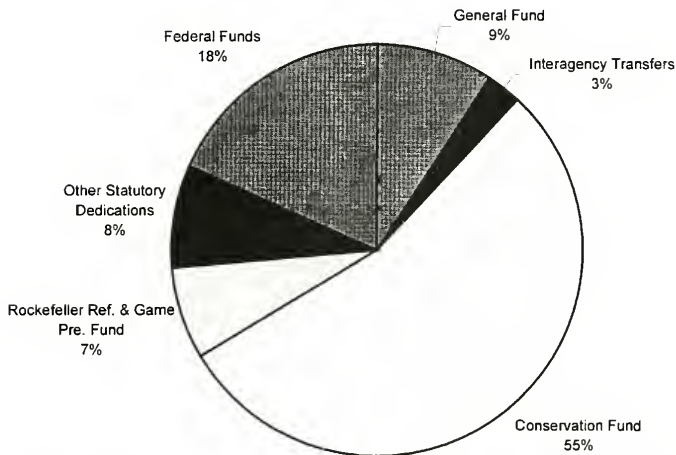
Total Expenditures \$55,025,377

FY 1999-2000 Expenditures by Program



Total Expenditures \$55,025,377

How 1999-2000 Expenditures Were Funded



■ General Fund	■ Interagency Transfers	□ Conservation Fund
□ Rockefeller Ref. & Game Pre. Fund	■ Other Statutory Dedications	■ Federal Funds

General funds were used to pay the judgment of \$4.4 million;
Total Means of Financing \$55,025,377

